



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor, Nashville, TN 37243
Telephone: (615) 532-0554, Email: Air.Pollution.Control@TN.gov

54-0047

APC 100

**NON-TITLE V PERMIT APPLICATION
FACILITY IDENTIFICATION**

Type or print and submit. Attach appropriate source description forms.

SITE INFORMATION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] ABB INSTALLATION PRODUCTS INC. #000909235			
2. Site name (if different from legal name)			
3. Is a construction permit application fee being submitted? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (see instructions for appropriate fee to submit)			
4. Site address (St./Rd./Hwy.) 260 DENNIS STREET			County name MCMINN
City ATHENS	Zip code 37303		5. NAICS or SIC code 335932
6. Site location (in lat. /long.)	Latitude 35.457389	Longitude 84.604261	

CONTACT INFORMATION (RESPONSIBLE PERSON)

7. Responsible person/Authorized contact SHANE SPARKS			Phone number with area code 423-745-6588
Mailing address (St./Rd./Hwy.) 260 DENNIS STREET			Fax number with area code 423-745-9545
City ATHENS	State TN	Zip code 37303	Email address SHANE.SPARKS@US.ABB.COM

CONTACT INFORMATION (TECHNICAL)

8. Principal technical contact LISA NEISLER			Phone number with area code 423-745-6588
Mailing address (St./Rd./Hwy.) 260 DENNIS STREET			Fax number with area code 423-745-9545
City ATHENS	State TN	Zip code 37303	Email address LISA.NEISLER@US.ABB.COM

CONTACT INFORMATION (BILLING)

9. Billing contact ACCOUNTS PAYABLE			Phone number with area code 423-745-6588
Mailing address (St./Rd./Hwy.) 260 DENNIS STREET			Fax number with area code 423-745-9545
City ATHENS	State TN	Zip code 37303	Email address

AIR CONTAMINANT SOURCE(S) INFORMATION

- 10. Description of air contaminant source(s) and Unique Source ID(s).** List, identify, and briefly describe process emission sources, fuel burning installations, and incinerators that are contained in this application and include a Unique Source ID for each source. The Unique Source ID is a name/number/letter, which uniquely identifies the air contaminant source(s), like Boiler #1, Paint Line #1, Engine #1, etc. (see instructions for more details)

THIS APPLICATION IS FOR AN ELECTROPLATING MACHINE THAT COATS STEEL STRUT WITH ZINC TO PREVENT CORROSION. THE ELECTROPLATING LINE IS MADE OF VARIOUS HOLDING TANKS WITH VARIOUS AQUEOUS SOLUTIONS OF CLEANERS, RINSE WATERS, NON-CYANIDE ALKALINE ZINC ELECTROPLATING SOLUTION, AND TRIVALENT CHROMIUM CONVERSION COATINGS.

- 11. Is the air contaminant source(s) in a nonattainment area? If "Yes", then minor source BACT must be addressed.** Yes ☐ No ☒

12. Normal operation:	Hours/Day 24	Days/Week 7	Weeks/Year 52	Days/Year 365
13. Percent annual throughput	Dec. - Feb. 24	March - May 24	June - August 24	Sept. - Nov. 24

TYPE OF PERMIT REQUESTED (check appropriate box)

14. Operating permit <input type="checkbox"/>	Date construction started 4-1-2019	Date completed	Date of ownership change (if applicable)
	Last permit number(s)		Emission Source Reference Number(s)
Construction permit <input checked="" type="checkbox"/>	Last permit number(s)		Emission Source Reference Number(s)

If you chose Construction permit above, then choose either New Construction, Modification, or Location Transfer

New Construction <input checked="" type="checkbox"/>	Starting date 4-1-2019	Completion date
Modification <input type="checkbox"/>	Date modification started or will start	Date completed or will complete
Location Transfer <input type="checkbox"/>	Transfer date	Address of last location

15. Describe changes that have been made to this equipment or operation(s) since the last construction or operating permit application:

N/A

16. Comments

N/A

SIGNATURE

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

17. Signature (application must be signed before it will be processed)

Date

Signer's name (type or print)

Title

Phone number with area code

SHANE SPARKS

PLANT MANAGER

423-745-6588



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APC 101

**NON-TITLE V PERMIT APPLICATION
EMISSION POINT DESCRIPTION**

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.					
GENERAL IDENTIFICATION AND DESCRIPTION					
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] ABB INSTALLATION PRODUCTS INC. #000909235					
2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) #05081					
3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) SCRUBBER #1					
4. Brief description of air contaminant source (Attach a diagram if appropriate): JESSUP PLATER ELECTROPLATING MACHINE-NON-CYANIDE ALKALINE ZINC PLATING WITH TRIVALENT CHROMIUM CONVERSION COATING					
5. Emission point location	Latitude	Longitude	6. Distance to nearest property line (Ft.) 125		
STACK AND EMISSION DATA					
7. Stack or emission point data: →	Height above grade (Ft.) 39	Diameter (Ft.) 4.667	Temperature (°F)	% of time over 125°F	Direction of exit (Up, down or horizontal) UP
Data at exit conditions: →	Flow (actual Ft. ³ /Min.) 76255	Velocity (Ft. /Sec.) 52.63	Moisture (Grains/Ft. ³) 6.2		Moisture (Percent) 80
Data at standard conditions: →	Flow (Dry std. Ft. ³ /Min.) 76255	Velocity (Ft. /Sec.) 52.63	Moisture (Grains/Ft. ³) 3.9		Moisture (Percent) 50
8. Monitoring device and recording instrument (check all that apply):					
Opacity monitor <input type="checkbox"/>	SO ₂ monitor <input type="checkbox"/>	NO _x monitor <input type="checkbox"/>	Strip chart <input type="checkbox"/>	Electronic data logger <input type="checkbox"/>	Other (specify in comments) <input type="checkbox"/>
No monitor (none) <input type="checkbox"/>					
9. Control device. Description of proposed monitoring, recordkeeping, and reporting to assure compliance with emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.). SEE ATTACHED DESCRIPTION AND FLOW DIAGRAMS					

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concentration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Efficiency %
Particulate matter (PM)		0.00499	**	0.01042		3	001	99
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)			PPM					
Nitrogen oxides (NO _x)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

11. Comments

SEE ATTACHED DESCRIPTION AND FLOW DIAGRAMS

SIGNATURE

If this form is being submitted at the same time as an APC 100 form, then a signature is not required on this form. Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the same time as an APC 100 form, then a signature is required.

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

12. Signature**Date**

9/21/18

Signer's name (type or print)

SHANE SPARKS

Title

PLANT MANAGER

Phone number with area code

423-745-6588

- * Refer to the tables in the instructions for estimation method and control device codes.
- ** Exit gas particulate matter concentration units: Process – Grains/Dry Standard Ft³ (70°F), Wood fired boilers - Grains/Dry Standard Ft³ (70°F), all other boilers – Lbs. /Million BTU heat input.
- *** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input



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APC 101

**NON-TITLE V PERMIT APPLICATION
EMISSION POINT DESCRIPTION**

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GENERAL IDENTIFICATION AND DESCRIPTION						
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] ABB INSTALLATION PRODUCTS INC. #000909235						
2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) #05081						
3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) SCRUBBER #2						
4. Brief description of air contaminant source (Attach a diagram if appropriate): JESSUP PLATER ELECTROPLATING MACHINE-NON-CYANIDE ALKALINE ZINC PLATING WITH TRIVALENT CHROMIUM CONVERSION COATING						
5. Emission point location	Latitude	Longitude	6. Distance to nearest property line (Ft.) 125			
STACK AND EMISSION DATA						
7. Stack or emission point data: →	Height above grade (Ft.) 39	Diameter (Ft.) 4.667	Temperature (°F)	% of time over 125°F	Direction of exit (Up, down or horizontal) UP	
Data at exit conditions: →	Flow (actual Ft. ³ /Min.) 37900	Velocity (Ft. /Sec.) 52.63	Moisture (Grains/Ft. ³) 6.2		Moisture (Percent) 80	
Data at standard conditions: →	Flow (Dry std. Ft. ³ /Min.) 37900	Velocity (Ft. /Sec.) 52.63	Moisture (Grains/Ft. ³) 3.9		Moisture (Percent) 50	
8. Monitoring device and recording instrument (check all that apply):						
Opacity monitor <input type="checkbox"/>	SO ₂ monitor <input type="checkbox"/>	NO _x monitor <input type="checkbox"/>	Strip chart <input type="checkbox"/>	Electronic data logger <input type="checkbox"/>	Other (specify in comments) <input type="checkbox"/>	No monitor (none) <input type="checkbox"/>
9. Control device. Description of proposed monitoring, recordkeeping, and reporting to assure compliance with emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.). SEE ATTACHED DESCRIPTION AND FLOW DIAGRAMS						

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concentration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Efficiency %
Particulate matter (PM)		0.00248	**	0.00518		3	001	99
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)			PPM					
Nitrogen oxides (NO _x)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

11. Comments

SEE ATTACHED DESCRIPTION AND FLOW DIAGRAMS

SIGNATURE

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Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

12. Signature**Date****Signer's name** (type or print)**Title****Phone number with area code**

SHANE SPARKS

PLANT MANAGER

423-745-6588

- * Refer to the tables in the instructions for estimation method and control device codes.
- ** Exit gas particulate matter concentration units: Process – Grains/Dry Standard Ft³ (70°F), Wood fired boilers - Grains/Dry Standard Ft³ (70°F), all other boilers – Lbs. /Million BTU heat input.
- *** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input



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APC 107

**NON-TITLE V PERMIT APPLICATION
SURFACE COATING DESCRIPTION**

Type or print. Submit for each spray booth, dip tank, or other surface coating equipment. Submit with the APC 100.													
GENERAL IDENTIFICATION AND DESCRIPTION													
1. Organization's legal name and SOS control number [as registered with the Tennessee Secretary of State (SOS)] ABB INSTALLATION PRODUCTS INC. #000909235						2. Emission Source Reference Number							
3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If Yes, list rule citation, including Part, Subpart, and applicable Sections: 40 CFR 63 SUBPART WWWWWW													
COATING OPERATION DATA													
4. Unique Source ID (name/number/letter that uniquely identifies this air contaminant source, like Paint Line 1) #05081													
5. Type of coating operation		Spray booth <input type="checkbox"/>		Dip tank <input checked="" type="checkbox"/>		Other (describe)							
6. Spray booth dimensions		Width (ft.)		Height (ft.)		Depth (ft.)		Number of open sides					
7. Method of spray:		Airless <input type="checkbox"/>		Air atomized <input type="checkbox"/>		Electrostatic Airless <input type="checkbox"/> Disc <input type="checkbox"/> Air atomized <input type="checkbox"/>		Overspray (Percent)		Date purchased *			
8. Exhaust data:		Number of fans		Total horsepower		Total volume (CFM) 114155							
9. Exhaust control:		None <input type="checkbox"/>		Waterwash <input type="checkbox"/>		Exhaust filters <input type="checkbox"/>		Baffle plates <input type="checkbox"/>		Adsorption ** <input type="checkbox"/>		Other (Describe) WET-BED PACKED SCRUBBER	
10. Exhaust stack data **		Diameter (Ft.) 4.66/4		Height (Ft.) Above Grade 39/39		Flow (CFM) 76255/37900		Specify serial numbers that share this vent 05081					
11. Control device. Description of proposed monitoring, recordkeeping, and reporting to assure compliance with emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.).													

* The actual surface coating equipment (spray gun, spray heads, etc.) and not the spray booth per se determines the status of the source (new or existing).

** Complete one line for each stack or vent. Attach additional sheets if necessary

NOTE: This application will not be processed unless all of the following information is provided.

MATERIAL DATA

12. Coatings, Thinners, and Clean-up Solvents used:

List all types of coatings, thinners, and clean-up solvents used and attach a statement of the chemical composition of each (i.e. Safety Data Sheet). This statement usually may be obtained from the coating, thinner, or clean-up solvent supplier. The minimum information required is the percent of solids by weight, the percent volatile by weight, the hydrocarbon composition and/or description of the volatile component, and the density of the coating, thinner, or clean-up solvent in pounds per gallon.

Coating name	Base [Water, Powder or Solvent*]	%Solids by Weight	%Volatile by Weight	Density (Lbs. /Gal.)	Quantity used		
					Gallons/Day		Gal./Mo.
					Average	Maximum **	Average
MERLIN STARTER	AQ		0	8.47	19	25	390
MERLIN BRIGHTENER	AQ		0	8.55	86	90	1788
ZINC DIP PART A	POWDER		0	N/A	62LB	70LB	1292LB
ZINC DIP PART B	POWDER		0	N/A	60 LB	70 LB	1250 LB
HYPRO YELLOW UVS	AQ		0	9.01	22	30	450
HYPROTEC (TRI-CHROME)	AQ		0	11.76	22	30	458
CLEAN R 235	AQ		0	9.42	12	15	252
LIQUICLEAN LECTRO NA	AQ		0	11.30	14	18	298
****TRIVALENT CHROME IS	ONLY USED	IN	CONV.	COATIN	NOT	ELECTRO-	PLATING
Thinner name							
Clean - up solvent name							

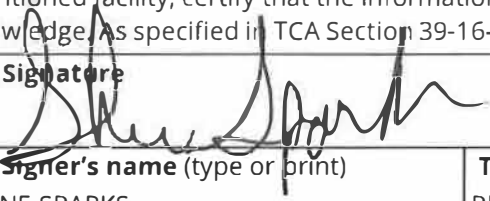
* Name Solvent Base type

** For new construction, this quantity will be used as a permit limitation on capacity.

13. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concentration	Average Emissions (Tons/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Efficiency %
Particulate matter (PM)		0.00746		0.0327		3	001	99
Sulfur dioxide (SO ₂)								
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)			PPM					
Nitrogen oxides (NO _x)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								

* Refer to the tables in the instructions for estimation method and control device codes.

EQUIPMENT DESCRIPTION		
14. Equipment manufacturer JESSUP MANUFACTURING	Model number	Serial number (or plant ID) 05081
Construction date 4-1-2019		Modification date
Describe any modifications*		
15. Describe articles coated STEEL STRUT WILL BE COATED WITH NON-CYANIDE ALKALINE ZINC ELECTROPLATING WITH A TRIVALENT CHROMIUM CONVERSION COATING.		
16. Comments		
SIGNATURE If this form is being submitted at the same time as an APC 100 form, then a signature is not required on this form. Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the same time as an APC 100 form, then a signature is required. Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.		
17. Signature 		Date 9/21/2018
Signer's name (type or print) SHANE SPARKS	Title PLANT MANAGER	Phone number with area code 423-745-6588

Jessup Plater #05081

VOC Calculation
No VOC Content

HAP Calculations
The new plating process contains no HAP materials.

AP-42 CALCULATIONS FOR PM

CONTROLLED EMISSIONS (AP-42 CHAPTER 12.20)

$E_{fm} = (\text{Emission Factor for metal } m \text{ in gr/dscf}) = 0.028 \times E_{fcr} \times C_m$

Where:

E_{fcr} = Emission factor for controlled hard chromium electroplating emissions
= 2.10×10^{-5}

$E_{fcr}(\text{PM})$ = Emission factor for controlled hard chromium electroplating emissions
= 4.40×10^{-5}

C_m = Bath concentration of Metal M
= 2 oz/gal

$E_{fm}(\text{Emission factor for Zinc}) = 0.028 \times E_{fcr} \times C_m = 1.18 \times 10^{-6}$

$E_{fm}(\text{Emission factor for Particulate Matter}) = 0.028 \times E_{fcr}(\text{PM}) \times C_m = 2.46 \times 10^{-6}$

Emissions are calculated using these emission factors and formula:

$\text{Emissions} = E_{fm}(\text{gr/dscf}) \times \text{flow rate (cfm)} \times \text{operating time (min/yr)} / 7000 \text{ gr/lb}$

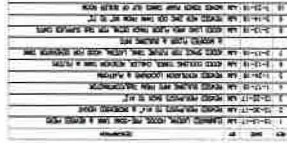
Where:

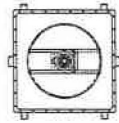
Scrubber #1	Flow rate	76255 cfm		
	Operating Time	8760 hours/year x 60 minutes/hour = 525,600 min/year		
	PM Emissions (Controlled)	$= 2.46 \times 10^{-6}(\text{gr/dscf}) \times 51460(\text{cfm}) \times 525,600(\text{min/yr}) / 7,000(\text{gr/lb}) =$	14.09 lbs/year	$1.61 \times 10^{-3} \text{ lbs/hr.}$
	Zinc Emissions (Controlled)	$= 1.18 \times 10^{-6} \times 51,460(\text{cfm}) \times 525,600(\text{min/yr}) / 7000(\text{gr/lb})$	6.76 lbs/year	$3.38 \times 10^{-3} \text{ lbs/hr.}$
Scrubber #2	Where:		Scrubber #1	20.84 lbs/year
	Flow rate	37900 cfm		
	Operating Time	525,600 min/year		
	PM Emissions (Controlled)	$= 2.46 \times 10^{-6}(\text{gr/dscf}) \times 37,900(\text{cfm}) \times 525,600(\text{min/yr}) / 7,000(\text{gr/lb}) =$	7.00 lbs/year	$7.99 \times 10^{-4} \text{ lbs/hr.}$
	Zinc Emission. (Controlled)	$= 1.18 \times 10^{-6}(\text{gr/dscf}) \times 37900(\text{cfm}) \times 525,600(\text{min/yr}) / 7,000(\text{gr/lb}) =$	3.36 lbs/year	1.68×10^{-3}
***Assume Zinc Emissions are PM emissions and are less than 10 microns in size			Scrubber #2	10.36 lbs/year

Zinc Emissions + PM Emissions = Total PM Emissions (assuming particle size is less than 10 microns for Zinc)

Total PM Emissions = 0.00746 lbs/hr = $6.54 \times 10^1 \text{ lbs/year}$ **$3.27 \times 10^{-2} \text{ tons/year}$**

Total PM plater Emissions = $3.27 \times 10^{-2} \text{ tons/year}$





REVISION DATE	REVISION BY	REVISION STATUS	REVISION
4-11-05	AJM		REVISED FLOOR LAYOUT PER CUSTOMER'S DRAWING
4-15-05	AJM		ADDED 2 FEET TO RECTIFIER ROOM FOR RECTIFIERS
5-4-05	AJM		REVISED RECTIFIER ROOM DIMENSION
5-24-05	AJM		RELOCATED LAST 3 MACHINE COLUMNS TOWARDS WALL
6-3-05	AJM		REVISED SIZING OF E.C. RECTIFIER
6-20-05	AJM		REVISED TANK LINE SPACING BETWEEN TANKS FOR CYCLE
6-22-05	AJM		REVISED MACHINE COLUMN TO CLEAR ZINC GENERATOR
7-13-05	JPOB		ADDED COOLING TOWER
8-1-05	AJM		MODIFIED PANEL SIZES

A

1A 1B
LOAD L/UL

COLLECTION TANK
ZINC GENERATOR



AUTOMATIC RACK ZINC SYSTEM

THOMAS & BETTS

JESSUP ENGINEERING, INC.

1745 BOND STREET, ROCHESTER HILLS, MICHIGAN 48069

REV: 8-1-05 DATE: 4-6-05 DRAWING NUMBER: 005981-1A

DRAWN BY: AJM SCALE: 3/16"=1'-0"

XXIII - TANK SCHEDULE**THOMAS & BETTS****JESSUP ENGINEERING INC.**

TANK No.	PROCESS	No. CELLS	TANK DOT "	TANK VOL GAL	TANK CONSTRUCT /LINING	OVERFLOW TYPE SIZE	DRN SIZE	BTM DRN SIZE	C'FLW TO TNK#	TANK TEMP (F)	HEATING/ COOLING EQUIP	EXHAUST CFM/SYS	AIR AGT CFM	LEVEL CNTL	FLTR RATE TPH	DC PWR SUPPLY AMP/VOLT	BELT TYPE
1A/B	LOAD/UNLOAD	2	120	---	MILD STL	---	---	---									
2	SOAK CLEAN	2	46	4,220	MILD STL	ET/12"	3"	--		180	MS COIL	X		AUTO			2
3	ELECTROCLEAN	2	62	5,690	MILD STL	ET/12"	3"	--		170	MS COIL	X		AUTO		15,000/18	2
4	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	3"					52				1
5	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	--	PC4				52				1
6A	ACID (SULFURIC)	1	24	2,200	MS/PVC	--	---	---				X					2
6B	ACID (SULFURIC)	1	24	2,200	MS/PVC	--	---	---				X					2
7	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	3"					52				1
8	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	---	PC7				52				1
9A	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X			1.5	10,000/12	2
9B	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X				10,000/12	2
9C	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X			1.5	10,000/12	2
9D	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X				10,000/12	2
9E	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X			1	10,000/12	2
9F	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X				10,000/12	2
9G	ALKALINE ZINC	1	40	3,670	MS/PP	ET/12"	4"	3"		110	EXT. P&F	X				10,000/12	2
10	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	3"					52				1
11	HIGH BAY RINSE	1	24	2,200	MS/PVC	EW/4"	3"	--	PC10				52				1
12	SOUR DIP	1	24	2,200	316SS	--	---	---					52				1
13A	BLUE BRIGHT	1	24	2,200	316SS	--	---	---					52				1
14A	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	3"					52				1
15A	WARM RINSE	1	24	2,200	MS/PVC	EW/4"	3"	--	PC14A	100	SS COIL		52				1
13B	YELLOW CHROMATE	1	24	2,200	316SS	--	---	---					52				1
14B	RINSE	1	24	2,200	MS/PVC	EW/4"	3"	3"					52				1
15B	WARM RINSE	1	24	2,200	MS/PVC	EW/4"	3"	--	PC14B	100	SS COIL		52				2
16	DRYER	2	48	---	ALUM STL	--	---	2"									

TANK WIDTH 312**TANK DEPTH 72**

MS = MILD STEEL

TI = TITANIUM

GPM = GALLONS/ MINUTE

BC = BAFFLE COUNTERFLOW

SS = STAINLESS STEEL

PVDF = TEFLON EQUIVALENT

FLTR = FILTER

PC = PIPED COUNTERFLOW

PVC = POLYVINYL CHLORIDE

DRN = DRAIN

HB = HYDROSTATIC BUBBLER

M = PUMP COUNTERFLOW

HTR = HIGH TEMP RUBBER

DOT = DIRECTION OF TRAVEL

LVL = LEVEL CONTROL

W = SIDE WEIR OVERFLOW

PP = POLYPROPYLENE

CFM = CUBIC FEET/ MINUTE

TPH = TURNS/ HOUR

EW = END WEIR OVERFLOW

FRP = FIBERGLASS

AGT = AGITATION

C'FL = COUNTERFLOW

T = SIDE TRAP OVERFLOW



SAFETY DATA SHEET

MERLIN STARTER

Prepared according to U.S. OSHA, GHS, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **MERLIN STARTER**
PRODUCT CODE: ZB1533
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: None
U.N. DANGEROUS GOODS CLASS: Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME: **PAVCO INC**
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF CURRENT REVISION: March 12, 2015
DATE OF LAST REVISION: February 29, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a pale yellow liquid with a slight organic odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin, eye and respiratory irritation. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning!

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC

Proprietary Reacted Mixture is not listed in ESIS

Substances not listed either individually or in group entries must be self classified. GHS

Hazard Classification(s):

Acute Oral Toxicity Category 4

Serious Eye Damage Category 2A

Hazard Statement(s):

H302: Harmful if swallowed

H315: Causes skin irritation

H319: Causes serious eye irritation

Precautionary Statement(s):

P260: Do not breathe dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product

P280: Wear protective gloves/protective clothing/eye protection/face protection



SAFETY DATA SHEET

MERLIN STARTER

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xn] Harmful [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed

R41: Risk of serious damage to eyes

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46: If swallowed, seek medical advice immediately and show container or label.

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce severe irritation

SKIN CONTACT: Prolonged or repeated skin exposure may cause irritation

INHALATION HAZARDS: Moderately irritating to the respiratory tract.

INGESTION HAZARDS: Irritating to mouth, throat and stomach.

CHRONIC: None known

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: None Known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	64 - 95%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Proprietary Reacted Mixture	Not Listed	Not Found in ESIS	Not Listed	1 - 10%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R41
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400 1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.



SAFETY DATA SHEET

MERLIN STARTER

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:**AUTOIGNITION TEMPERATURE:****FLAMMABLE LIMITS (In air by volume, %):****FIRE EXTINGUISHING MATERIALS:****UNUSUAL FIRE AND EXPLOSION HAZARDS:**Explosion Sensitivity to Mechanical Impact:Explosion Sensitivity to Static Discharge:**SPECIAL FIRE-FIGHTING PROCEDURES:**

Non-Flammable

Not Applicable

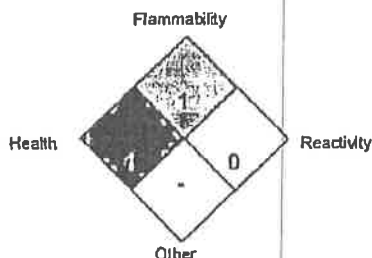
Lower (LEL): Not Applicable Upper (UEL): Not Applicable Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

None known

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM**HMIS RATING SYSTEM**

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			1
FLAMMABILITY HAZARD (RED)			1
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.**SPILLS:** SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.**STORAGE AND HANDLING PRACTICES:** Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis. Store above 35°F and below 130°F away from direct sunlight. Freezing will destroy the material.



SAFETY DATA SHEET

MERLIN STARTER

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Proprietary Reacted Mixture	Not Listed	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada or standards of EU member states (including EN 149 for respiratory PPE and EN 166 for face/eye protection) and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above. If applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE & ODOR:	Pale yellow liquid with a slight organic odor.
ODOR THRESHOLD (PPM):	Slight
VAPOR PRESSURE (mmHg):	Not Available
VAPOR DENSITY:	Heavier than air
EVAPORATION RATE (nBuAc = 1):	<1
BOILING POINT (C°):	95°C - 105°C (203°F - 221°F)
FREEZING POINT (C°):	Not Available
pH:	8.5 - 10.5
SPECIFIC GRAVITY 20°C: (WATER =1)	1.015
SOLUBILITY IN WATER (%)	Complete

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of sulfur and nitrogen.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Oxidizers, strong acids and bases

HAZARDOUS POLYMERIZATION: Will not occur.



SAFETY DATA SHEET

MERLIN STARTER

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is available for this product No
LD50 Data Available

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skin sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not known - Dependent on use and contamination

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: None UN

IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada



SAFETY DATA SHEET

MERLIN STARTER

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

This product is not classified as Dangerous Goods, by rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Yes
Health

Chronic Health: No

Fire: No

Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B. Materials causing other toxic effects as per the Controlled Product Regulations.

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.



SAFETY DATA SHEET

MERLIN STARTER

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

GHS MSDS Compliance PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet



SAFETY DATA SHEET

MERLIN BRIGHTENER

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MERLIN BRIGHTENER
PRODUCT CODE: ZB1534R
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: None
U.N. DANGEROUS GOODS CLASS: Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF CURRENT REVISION: March 12, 2015
DATE OF LAST REVISION: March 30, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a colorless/pale yellow liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause severe irritation. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI

EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC

Proprietary Reacted Mixture is not listed in ESIS

EC# 200-543-5 Annex I Index# 612-082-00-0

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Carcinogenicity Category 2

Reproductive Toxicity Category 2

Acute Oral Toxicity Category 4

Chronic Aquatic Toxicity Category 2



SAFETY DATA SHEET

MERLIN BRIGHTENER

Hazard Statement(s):

H302: Harmful if swallowed
H351: Suspected of causing cancer
H361: Suspected of damaging fertility or the unborn child
H315: Causes skin irritation
H411: Toxic to aquatic life with long lasting effects

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed
R40: Limited evidence of carcinogenic effects
R41: Risk of serious damage to eyes.
R63: Possible risk of harm to the unborn child

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce severe irritation
SKIN CONTACT: Prolonged or repeated skin exposure may cause irritation
INHALATION HAZARDS: Inhalation of mists may be irritating to the respiratory tract.
INGESTION HAZARDS: Irritating to mouth, throat and stomach. Ingestion of large quantities may cause corrosion of G.I. tract, vomiting, diarrhea, circulatory collapse and even death.

CHRONIC: Prolonged or repeated contact may cause hepatic tumors and/or bone marrow depression. Contains a suspected carcinogen.

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: None Known

Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Phrases:

S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S46: If swallowed, seek medical advice immediately and show container or label.

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION: RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	85 - 95%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Proprietary Reacted Mixture	Not Listed	Not Found in ESIS	Not Listed	1 - 10%	HAZARD CLASSIFICATION: SELF CLASSIFIED: [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R41
Triurea	62-56-6	200-543-5	0680	<0.5%	HAZARD CLASSIFICATION: Carc. Cat 3, Repr. Cat 3, [Xn] Harmful RISK PHRASES: R40, R60, R22, R50/53
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE:

All WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.



SAFETY DATA SHEET

MERLIN BRIGHTENER

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable

Not Applicable

Lower (LEL): Not Applicable Upper (UEL): Not Applicable Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

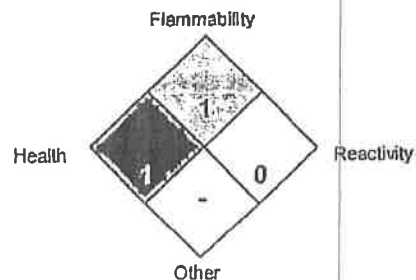
None known

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			1
FLAMMABILITY HAZARD (RED)			1
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).



SAFETY DATA SHEET

MERLIN BRIGHTENER

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Proprietary Reacted Mixture	Not Listed	Not Listed	Not Listed	Not Listed
Thiourea	62-56-6	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149 or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE & ODOR:	Colorless/pale yellow liquid with a slight odor.
ODOR THRESHOLD (PPM):	Slight
VAPOR PRESSURE (mmHg):	Not Available
VAPOR DENSITY:	Heavier than air
EVAPORATION RATE (nBuAc = 1):	<1
BOILING POINT (C°):	95°C - 105°C (203°F - 221°F)
FREEZING POINT (C°):	Not Available
pH:	<8.0
SPECIFIC GRAVITY 20°C: (WATER =1)	1.025



SAFETY DATA SHEET

MERLIN BRIGHTENER

SOLUBILITY IN WATER (%)

Complete

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of sulfur and nitrogen.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Acrolein, aluminum and acids.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is available for this product

Thiocarbamide CAS# 62-56-6

Oral LD50	125 ppm	Rat
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Dermal LD50	2800 ppm	Rabbit
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SUSPECTED CANCER AGENT: One or more of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is considered to be, nor suspected to be a cancer-causing agent by these agencies.

IARC and NTP Thiocarbamide CAS# 62-56-6 as a possible carcinogen

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skin sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: U219

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.



SAFETY DATA SHEET

MERLIN BRIGHTENER

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: None

UN IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is not classified as Dangerous Goods, by rules of IATA

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

SARA 313. Thiocarbamide CAS# 62-56-6 <0.5%.

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Yes
Health

Chronic Health. Yes

Fire: No

Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Thiocarbamide CAS# 62-56-6 10 Lb. RQ.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): One or more of the ingredients are on the California Proposition 65 lists.

WARNING! This product contains an ingredient that is known to the State of California to cause cancer or reproductive harm.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.



SAFETY DATA SHEET

MERLIN BRIGHTENER

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

GHS MSDS Compliance PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet



SAFETY DATA SHEET

ADDITIVE 1935

Prepared according to U.S. OSHA, GMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **ADDITIVE 1935**
PRODUCT CODE: ZB 1525
PRODUCT DESCRIPTION: Mixture
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: None
U.N. DANGEROUS GOODS CLASS: Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME: **PAVCO INC**
ADDRESS: 1935 John Crosland Jr. Dr. Charlotte, NC 28208 USA
EMERGENCY PHONE: **TOLL-FREE in USA/Canada** 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF CURRENT REVISION: March 12, 2015
DATE OF LAST REVISION: June 14, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a colorless pale yellow liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause severe irritation. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: **Warning!**

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910.1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI

EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC

Proprietary Mixture is not listed in ESIS

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Acute Oral Toxicity Category 4

Hazard Statement(s):

H302: Harmful if swallowed

H315: Causes skin irritation

Precautionary Statement(s):

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product

P280: Wear protective gloves/protective clothing/eye protection/face protection



SAFETY DATA SHEET

ADDITIVE 1935

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed

R41: Risk of serious damage to eyes.

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce severe irritation

SKIN CONTACT: Prolonged or repeated skin exposure may cause irritation

INHALATION HAZARDS: Inhalation of mists may be irritating to the respiratory tract.

INGESTION HAZARDS: Irritating to mouth, throat and stomach.

CHRONIC: None known

TARGET ORGANS:

ACUTE: Eye, Respiratory System, Skin

CHRONIC: None Known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	85 - 95%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Proprietary Mixture	Not Listed	Not Found In ESIS	Not Listed	5 - 15%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R41
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

Non-Flammable

Not Applicable

Lower (LEL): Not Applicable **Upper (UEL):** Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

SAFETY DATA SHEET

ADDITIVE 1935

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

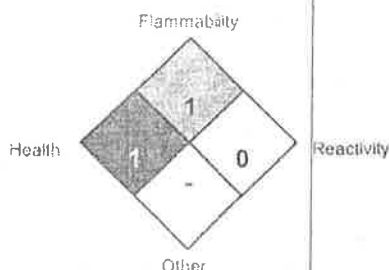
Containers can build up pressure if exposed to heat (fire).

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			1
FLAMMABILITY HAZARD (RED)			1
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BCDY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU.

Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product.

Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Proprietary Mixture	Not Listed	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.



SAFETY DATA SHEET

ADDITIVE 1935

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE & ODOR:	Colorless to pale yellow liquid with a slight odor.
ODOR THRESHOLD (PPM):	Slight
VAPOR PRESSURE (mmHg):	Not Available
VAPOR DENSITY:	Heavier than air
EVAPORATION RATE (nBuAc = 1):	<1
BOILING POINT (C°):	95°C - 105°C (203°F - 221°F)
FREEZING POINT (C°):	Not Available
pH:	5.0 - 8.5
SPECIFIC GRAVITY 20°C: (WATER =1)	1.007
SOLUBILITY IN WATER (%):	Complete
% VOLATILE WEIGHT:	96%

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and bases.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is available for this product

No LD 50 Data Available

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skin sensitizer.



SAFETY DATA SHEET

ADDITIVE 1935

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: U219

EU WASTE CODE: Not known – Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: None

UN IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is not classified as Dangerous Goods, by rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health* Yes

Chronic Health: No

Fire: No

Reactivity: No



SAFETY DATA SHEET

ADDITIVE 1935

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftlist List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

GHS MSDS Compliance PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet



SAFETY DATA SHEET

CLEAN R 235

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	CLEAN R 235
PRODUCT CODE:	CR235
CHEMICAL FAMILY NAME:	Mixture
U.N. NUMBER:	UN1814
U.N. DANGEROUS GOODS CLASS:	Class 8, CORROSIVE, Potassium Hydroxide Solution, PGII
SUPPLIER/MANUFACTURER'S NAME:	PAVCO INC
ADDRESS:	1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE:	TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE:	1-704-496-6800 (Product Information)
BUSINESS FAX:	1-704-496-6810
WEB SITE:	www.pavco.com
DATE OF CURRENT REVISION:	March 19, 2015
DATE OF LAST REVISION:	October 5, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a colorless to slight yellow liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause irritation and/or burns. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Danger!

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI

EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC

EC# 215-181-3 Annex VI Index # 019-002-00-8

EC# 215-199-1 This substance is not classified in the Annex VI of Directive 67/548/EEC

EC# 230-785-7 This substance is not classified in the Annex VI of Directive 67/548/EEC

Proprietary Mixture is not classified in the Annex VI of Directive 67/548/EEC

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Acute Oral Toxicity Category 4

Skin Corrosive Category 1A



SAFETY DATA SHEET

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Hazard Statement(s):

H302: Harmful if swallowed
H314: Causes severe skin burns and eye damage
H320: Causes eye irritation
H333: May be harmful if inhaled

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[C] Corrosive, [Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed
R35: Causes severe burns
R36/37/38: Irritating to eyes, respiratory system and skin

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce irritation. Direct contact may cause possible eye damage.
SKIN CONTACT: Prolonged or repeated skin exposure may cause irritation and possible chemical burns.

INHALATION HAZARDS: Inhalation of mists may be irritating to the respiratory tract.

INGESTION HAZARDS: Corrosive: Irritating to mouth, throat and stomach. May cause gastrointestinal tract irritation.

CHRONIC: None Known

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: None Known

Precautionary Statement(s):

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Phrases:

S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S46: If swallowed, seek medical advice immediately and show container or label.

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION: RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	55 - 65%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Potassium Hydroxide Liquid	1310-58-3	215-181-3	0357	15 - 20%	HAZARD CLASSIFICATION: [Xn] Harmful [C] Corrosive RISK PHRASES: R22, R35
Potassium Silicate	1312-76-1	215-199-1	Not Listed	10 - 15%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xi] Irritant RISK PHRASES: R36/37/38
Tetrapotassium Pyrophosphate	7320-34-5	230-785-7	0183	5 - 10%	HAZARD CLASSIFICATION: SELF CLASSIFIED [C] Corrosive RISK PHRASES: R34
Proprietary Mixture	Proprietary	Proprietary	Not Listed	5 - 10%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xi] Irritant RISK PHRASES: R36/37/38
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.



SAFETY DATA SHEET

CLEAN R 235

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable

Not Established

Lower (LEL): Not Established Upper (UEL): Not Established

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

Containers can build up pressure if exposed to heat

Not Sensitive.

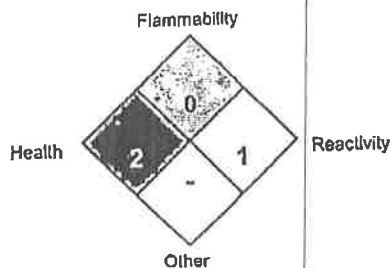
Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

HMIS RATING SYSTEM

HMIS RATING SYSTEM			
HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			0
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

NFPA RATING SYSTEM



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: **SMALL SPILL:** Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. **LARGE SPILL:** Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).



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CLEAN R 235

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. Keep from freezing. If freezing occurs, warm and mix well before using. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Potassium Hydroxide Liquid	1310-58-3	2 mg/m ³	2 mg/m ³	2 mg/m ³
Potassium Silicate	1312-76-1	Not Listed	Not Listed	Not Listed
Tetrapotassium Pyrophosphate	7320-34-5	Not Listed	Not Listed	Not Listed
Proprietary Mixture	Proprietary	Not Listed	Not Listed	Not Listed

Currently, international exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:
APPEARANCE & ODOR:
ODOR THRESHOLD (PPM):
VAPOR PRESSURE (mmHg):
VAPOR DENSITY:
EVAPORATION RATE (nBuAc = 1):
BOILING POINT (C°):
FREEZING POINT (C°):
pH:
SPECIFIC GRAVITY 20°C: (WATER =1)

Liquid
Colorless to slightly yellow liquid with a slight odor.
Slight
Not Available
Heavier than air
<1
95°C - 105°C (203°F - 221°F)
0°C (32°F)
>11.0
1.13



SAFETY DATA SHEET

CLEAN R 235

SOLUBILITY IN WATER (%)
% VOLATILE WEIGHT:

Complete
Not Available ✓

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon, phosphoric acid, oxides of phosphorus and oxides of potassium

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Reacts with acids, zinc and aluminum.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product

CAS# 1310-58-3 Oral LD50 273 ppm Rat

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skin sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Potassium Hydroxide Solution

HAZARD CLASS NUMBER and DESCRIPTION: Class 8 Corrosive

UN IDENTIFICATION NUMBER: UN1814

PACKING GROUP: PGII

DOT LABEL(S) REQUIRED: Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): 154



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MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects and Class E Corrosive materials, as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.



SAFETY DATA SHEET

CLEAN R 235

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftlist List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

GHS MSDS Compliance PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

Prepared according to U.S. OSHA, GMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: LIQUICLEAN LECTRO NA
PRODUCT CODE: CR340
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: UN1824
U.N. DANGEROUS GOODS CLASS: Sodium Hydroxide Solution, Class 8, PGII
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF PREPARATION: March 4, 2013
DATE OF LAST REVISION: October 8, 2008

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a colorless to pale yellow liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause irritation and/or burns. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning!

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 215-185-5 Annex I Index# 011-002-00-6

EC# 231-791-2 This substance is not classified in the Annex I of Directive 67/548/EEC

CAS# 10213-79-3 is not listed in ESI

Proprietary Mixture is not classified in the Annex I of Directive 67/548/EEC

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Acute Oral Toxicity Category 4

Eye Irritant Category 2

Skin Corrosive Category 1B

Hazard Statement(s):

H302: Harmful if swallowed

H314: Causes severe skin burns and eye damage

H320: Causes eye irritation

H333: May be harmful if inhaled

Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product

P280: Wear protective gloves/protective clothing/eye protection/face protection



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[C] Corrosive, [Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed

R35: Causes severe burns

R36/37/38: Irritating to eyes, respiratory system and skin

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46: If swallowed, seek medical advice immediately and show container or label.

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce diffuse or localized blood vessel clots and accumulation of fluid in the eye. Softening, sloughing, and ulcerations of the cornea may occur. Ulcerations may continue to progress for many days. Severe injury may lead to clouding of the eye surface and blindness.

SKIN CONTACT: Corrosive: Prolonged or repeated skin exposure may cause irritation

INHALATION HAZARDS: May be irritating to the respiratory tract. Swelling or spasms of the layers leading to upper airway obstruction and asphyxia can occur after high-dose inhalation. Inflammation of the lungs and accumulation of fluid in the lungs may also occur.

INGESTION HAZARDS: Can cause spontaneous vomiting, chest and abdominal pain, and difficulty swallowing with drooling. Corrosive injury to the mouth, throat, esophagus, and stomach may result in perforation, hemorrhage, and narrowing of the gastrointestinal tract.

CHRONIC: None Known

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: None Known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Sodium Hydroxide Liquid	1310-73-2	215-185-5	0360	50 - 60%	HAZARD CLASSIFICATION: [C] Corrosive, [Xn] Harmful RISK PHRASES: R22, R35
Water	7732-18-5	231-791-2	Not Listed	30 - 40%	HAZARD CLASSIFICATION: NONE RISK PHRASES: NONE
Sodium Metasilicate Pentahydrate	10213-79-3	Not Listed in ESIS	Not Listed	1 - 5%	HAZARD CLASSIFICATION: SELF CLASSIFIED [C] Corrosive RISK PHRASES: R34
Proprietary Mixture	Proprietary	Proprietary	Not Listed	1 - 5%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xi] Irritant RISK PHRASES: R36/37/38
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers)					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400 1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable

Not Established

Lower (LEL): Not Established Upper (UEL): Not Established

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

None known



Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

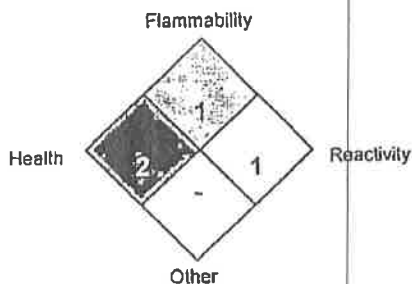
HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			1
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

NFPA RATING SYSTEM



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU.

Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product.

Use in a well-ventilated location. Remove contaminated clothing immediately.



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis. Pavco will not accept responsibility for any occurrence or mishap that is a direct result of product storage and/or usage after its designated shelf life..

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Sodium Hydroxide Liquid	1310-73-2	2 mg/m ³	2 mg/m ³	2 mg/m ³
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Sodium Metasilicate Pentahydrate	10213-79-3	Not Listed	Not Listed	Not Listed
Proprietary Mixture	Proprietary	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls) If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:
APPEARANCE & ODOR:
ODOR THRESHOLD (PPM):
VAPOR PRESSURE (mmHg):
VAPOR DENSITY:
EVAPORATION RATE (nBuAc = 1):
BOILING POINT (C°):
FREEZING POINT (C°):
pH:
SPECIFIC GRAVITY 20°C: (WATER=1)
SOLUBILITY IN WATER (%):
% VOLATILE WEIGHT:

Liquid
Colorless to pale yellow liquid with a slight odor.
Slight
Not Available
Heavier than air
<1
95°C - 105°C (203°F - 221°F)
0°C (32°F)
>10.0
1.355
Complete
Not Available ✓



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon and other toxic fumes.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Zinc, Aluminum or Strong Acids

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product
CAS# 1310-73-2 Oral LD50 500 ppm Rat

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skinsensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT: IATA: IMO: ADR:

THIS PRODUCT IS CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Sodium Hydroxide Solution

HAZARD CLASS NUMBER and DESCRIPTION: Class 8 Corrosive

UN IDENTIFICATION NUMBER: UN1824

PACKING GROUP: PGII

DOT LABEL(S) REQUIRED: Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): 154



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS:

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Sodium Hydroxide CAS# 1310-73-2 1,000 Lbs RQ.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects and Class E Corrosive materials, as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.



SAFETY DATA SHEET

LIQUICLEAN LECTRO NA

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftlist List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

MSDS Authoring PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.



MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ZINC DIP PART B
PRODUCT CODE: NC201
CHEMICAL FAMILY NAME: Sulfamic Acid
U.N. NUMBER: UN2967
U.N. DANGEROUS GOODS CLASS: Class 8, Corrosive, Sulphamic Acid
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF PREPARATION: June 13, 2014
DATE OF LAST REVISION: October 11, 2007

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a white to off-white granular powder with no odor.

Health Hazards: Corrosive; May cause severe eye and skin irritation. May cause respiratory and digestive tract irritation. May be harmful if swallowed.

Flammability Hazards: This product is Non-Flammable.

Reactivity Hazards: None known

Environmental Hazards: The Environmental effects of this product have not been investigated. This product contains ingredients that may cause adverse long term effects to the aquatic environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning!

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 226-218-8 Annex I Index# 016-026-00-0

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Skin Irritant Category 2

Eye Irritation Category 2

Chronic Aquatic Toxicity Category 3

Hazard Statement(s):

H315: Causes skin irritation

H319: Causes severe eye irritation

H412: Harmful to aquatic life with long lasting effects

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xi] Irritant

Risk Phrases:

R34: Causes burns

R36/38: Irritating to eyes and skin

R52/53: harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Precautionary Statement(s):

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S37/39: Wear suitable gloves and eye/face protection

S61: Avoid release to the environment



MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce diffuse or localized blood vessel clots and accumulation of fluid in the eye. Softening, sloughing, and ulcerations of the cornea may occur. Ulcerations may continue to progress for many days. Severe injury may lead to clouding of the eye surface and blindness.

SKIN CONTACT: Can be moderately corrosive. Contact may not cause symptoms for several hours.

INHALATION HAZARDS: Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. May cause pulmonary edema, a medical emergency. Pulmonary edema may be delayed up to 48 hours.

INGESTION HAZARDS: Can cause spontaneous vomiting, chest and abdominal pain, and difficulty swallowing with drooling. Corrosive injury to the mouth, throat, esophagus, and stomach may result in perforation, hemorrhage, and narrowing of the gastrointestinal tract.

CHRONIC: Material may destroy or damage any organ it comes in contact with.

TARGET ORGANS: ACUTE: Eye, Respiratory System, Skin CHRONIC: Respiratory System

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION, RISK PHRASES
Sulfamic Acid	5329-14-6	226-218-8	0328	90 - 100%	HAZARD CLASSIFICATION [Xi] Irritant RISK PHRASES: R36/38, R52/53
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers)					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400 1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2009.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

Non-Flammable

Not Applicable

Lower (LEL): Not Applicable Upper (UEL): Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

Booms or other methods should be used to prevent material from reaching waterways.

Not Sensitive

Not Sensitive



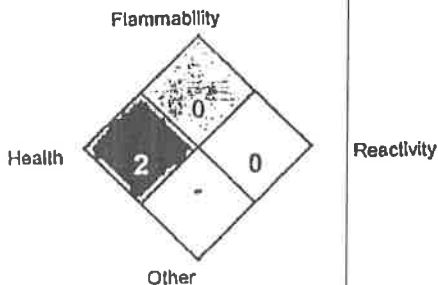
MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

SPECIAL FIRE-FIGHTING PROCEDURES:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			0
PHYSICAL HAZARD (YELLOW)			1
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.
SPILLS: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Notify proper authorities if required by local, state, or federal regulations.
 Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.
STORAGE AND HANDLING PRACTICES: Store in a cool place in original container. Keep containers sealed to avoid contamination and spillage. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Sulfamic Acid	5329-14-6	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.



OVERSEAS BRANCHES

MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 156 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable.

If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:

APPEARANCE & ODOR:

Granular Solid

This product is a white to off-white granular powder with no odor.

None

ODOR THRESHOLD (PPM):

VAPOR PRESSURE (mmHg):

Not Applicable

VAPOR DENSITY:

Not Applicable

EVAPORATION RATE (nBuAc = 1):

Not Applicable

BOILING POINT (C°):

Not Applicable

MELTING POINT (C°):

Not Applicable

pH:

Not Applicable

SPECIFIC GRAVITY 20°C: (WATER =1)

Not Applicable

SOLUBILITY IN WATER (%):

Soluble

% VOLATILE WEIGHT:

Not Applicable ✓

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of sulfur

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Reacts with bases, and metals, such as iron, and zinc

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA:

CAS# 5329-14-6:

Oral, rat: LD50 = 3160 mg/kg.

SUSPECTED CANCER AGENT: None of the ingredients in concentration greater than 0.1% are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin and eyes

SENSITIZATION OF PRODUCT: This product does not contain an ingredient that is considered a skin and respiratory sensitizer

REPRODUCTIVE TOXICITY INFORMATION: No data available.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No data is currently available for this product.



MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants and animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Sulfamic Acid

HAZARD CLASS NUMBER and DESCRIPTION: Class 8, Corrosive

UN IDENTIFICATION NUMBER: UN2967

PACKING GROUP: PGIII

DOT LABEL(S) REQUIRED: Class 8, Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2012): 154

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

SARA 302 TPQ: None

SARA 304 RQ: None

SARA 313 Reporting: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes

Chronic Health: Yes

Fire: No

Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Does not contain ingredients that are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of



MATERIAL SAFETY DATA SHEET

ZINC DIP PART B

this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as Class E Corrosive, as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftlist of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

MSDS Authoring PLUS

Disclaimer

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ZINC DIP PART A
PRODUCT CODE: NC200
CHEMICAL FAMILY NAME: Dry Blend
U.N. NUMBER: UN1498
U.N. DANGEROUS GOODS CLASS: Class 5.1, Oxidizer, Sodium Nitrate Mixture
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF PREPARATION: June 13, 2014
DATE OF LAST REVISION: October 11, 2007

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a white to off-white granular powder with no odor.

Health Hazards: May cause severe eye and skin irritation. May cause respiratory and digestive tract irritation. May be harmful if swallowed.

Flammability Hazards: This product is Non-Flammable. Strong oxidizer. Contact with combustible materials may cause a fire.

Reactivity Hazards: None known

Environmental Hazards: The Environmental effects of this product have not been investigated. This product contains ingredients that are not expected to cause adverse long term effects to the aquatic environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Danger!

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 231-554-3 This substance is not classified in the Annex I of Directive 67/548/EEC

EC# 215-608-3 Annex I Index# 009-007-00-3

Substances not listed either Individually or in group entries must be self classified.

GHS Hazard Classification(s):

Skin Corrosive Category 1B

Skin Irritant Category 2

Eye Irritation Category 2

Hazard Statement(s):

H314: Causes severe skin burns and eye damage

H315: Causes skin irritation

H319: Causes severe eye irritation

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xn] Harmful, [C] Corrosive, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed

R34: Causes burns

R36/37/38: Irritating to eyes, respiratory system and skin

Precautionary Statement(s):

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S37/39: Wear suitable gloves and eye/face protection



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce diffuse or localized blood vessel clots and accumulation of fluid in the eye. Softening, sloughing, and ulcerations of the cornea may occur. Ulcerations may continue to progress for many days. Severe injury may lead to clouding of the eye surface and blindness.

SKIN CONTACT: May cause irritation with redness. Contact with molten mixture may cause thermal burns and methemoglobinemia. Symptoms may include headache, weakness, dizziness, confusion, vomiting, and possible death.

INHALATION HAZARDS: May be irritating to the respiratory tract. Swelling or spasms of the layers leading to upper airway obstruction and asphyxia can occur after high-dose inhalation. Inflammation of the lungs and accumulation of fluid in the lungs may also occur.

INGESTION HAZARDS: Can cause spontaneous vomiting, chest and abdominal pain, and difficulty swallowing with drooling. Corrosive injury to the mouth, throat, esophagus, and stomach may result in perforation, hemorrhage, and narrowing of the gastrointestinal tract. Material may cause death if ingested in moderate amounts and left untreated.

CHRONIC: Prolonged exposure may cause anemia and methemoglobinemia, characterized by dizziness, drowsiness, headache, breath shortness, cyanosis (bluish skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood.

TARGET ORGANS:

ACUTE:

Eye, Respiratory System, Skin

CHRONIC: Respiratory System

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	ENECS #	ICSC #	WT %	HAZARD CLASSIFICATION: RISK PHRASES
Sodium Nitrate	7631-99-4	231-554-3	0185	90 - 99%	HAZARD CLASSIFICATION: [Xi] Irritant RISK PHRASES: R36/37/38
Sodium Bisulfide	1333-83-1	215-608-3	Not Listed	<10%	HAZARD CLASSIFICATION: [Xn] Harmful, [C] Corrosive, [Xi] Irritant RISK PHRASES: R22, R34, R36/38
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers)					

NOTE:

ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250:2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %)

FIRE EXTINGUISHING MATERIALS:

Non-Flammable

Not Applicable

Lower (LEL)

Not Applicable

Upper (UEL): Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam,



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

dry chemical, halon, water spray.

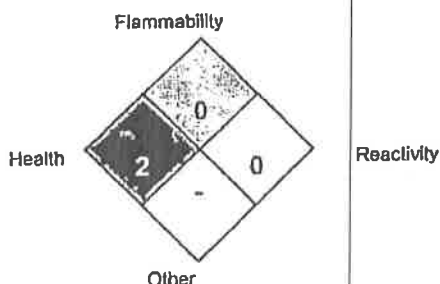
Oxidizers decompose, especially when heated, to yield oxygen or other gases which will increase the burning rate of combustible materials. Contact with easily oxidizable, organic, or other combustible materials may result in ignition, violent combustion or explosion.

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			0
PHYSICAL HAZARD (YELLOW)			1
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Notify proper authorities if required by local, state, or federal regulations. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container. Keep containers sealed to avoid contamination and spillage. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Sodium Nitrate	7631-99-4	2.0 mg/m³	Not Listed	2.0 mg/m³



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

Sodium Bifluoride	1333-83-1	2.5 mg/m ³	2.5 mg/m ³	2.5 mg/m ³
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Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Granular Solid
APPEARANCE & ODOR:	This product is a white to off-white granular powder with no odor.
ODOR THRESHOLD (PPM):	None
VAPOR PRESSURE (mmHg):	Not Applicable
VAPOR DENSITY:	Not Applicable
EVAPORATION RATE (nBuAc = 1):	Not Applicable
BOILING POINT (C°):	Not Applicable
MELTING POINT (C°):	Not Applicable
pH:	Not Applicable
SPECIFIC GRAVITY 20°C: (WATER =1)	Not Applicable
SOLUBILITY IN WATER (%)	Soluble
% VOLATILE WEIGHT:	Not Applicable

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of nitrogen.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and bases

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA:

CAS# 7631-99-4:

Oral, rabbit: LD50 = 2680 mg/kg;

Oral, rat: LD50 = 1267 mg/kg;

SUSPECTED CANCER AGENT: None of the ingredients in concentration greater than 0.1% are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are not considered to be, nor suspected to be a cancer-causing agent by these agencies.



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin and eyes

SENSITIZATION OF PRODUCT: This product does not contain an ingredient that is considered a skin and respiratory sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No data available.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No data is currently available for this product.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants and animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Sodium Nitrate Mixture

HAZARD CLASS NUMBER and DESCRIPTION: Class 5.1 Oxidizer

UN IDENTIFICATION NUMBER: UN1498

PACKING GROUP: PGIII

DOT LABEL(S) REQUIRED: Class 5.1 Oxidizer

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2012): 140

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

SARA 302 TPQ: None

SARA 304 RQ: None

SARA 313 Reporting: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes

Chronic Health: Yes

Fire: No

Reactivity: No



MATERIAL SAFETY DATA SHEET

ZINC DIP PART A

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Does not contain ingredients that are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as Class C Oxidizer, Class D Division 2B Materials with other toxic effects, as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

MSDS Authoring PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.



SAFETY DATA SHEET

ULTRAPURE

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ULTRAPURE
PRODUCT CODE: ZB1630
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: UN3082
U.N. DANGEROUS GOODS CLASS: Environmentally hazardous Substance, n.o.s. (Contains Thiourea), Class 9
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF PREPARATION: February 6, 2013
DATE OF LAST REVISION: August 20, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a yellow to colorless opaque liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause severe irritation. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Suspected cancer hazard: - contains material that may cause cancer.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning!

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 231-791-2 This substance is not classified in the Annex I of Directive 67/548/EEC

Proprietary Ingredient is not listed in ESIS

EC# 200-543-5 Annex 1 Index# 612-082-00-0

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Carcinogenicity Category 2

Reproductive Category 2

Acute Oral Toxicity Category 4

Skin irritation Category 2

Eye irritation Category 2A

Hazard Statement(s):

H302: Harmful if swallowed

H315: Causes skin irritation

H320: Causes eye irritation

H333: May be harmful if inhaled

H351: Suspected of causing cancer

H361: Suspected of damaging fertility or the unborn child

Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product

P280: Wear protective gloves/protective clothing/eye protection/face protection



SAFETY DATA SHEET

ULTRAPURE

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed

R36/37/38: Irritating to eyes, respiratory system and skin

R40: Limited evidence of carcinogenic effects

R63: Possible risk of harm to the unborn child

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46: If swallowed, seek medical advice immediately and show container or label.

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Eye exposure may produce severe irritation

SKIN CONTACT: Prolonged or repeated skin exposure may cause irritation

INHALATION HAZARDS: Inhalation of mists may be irritating to the respiratory tract.

INGESTION HAZARDS: Irritating to mouth, throat and stomach. May cause gastrointestinal tract irritation.

CHRONIC: This product contains an ingredient that may cause cancer or reproductive harm

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: Liver

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	80 - 90%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Proprietary Ingredient	Proprietary	Not Found in ESIS	Not Listed	1 - 10%	HAZARD CLASSIFICATION: SELF CLASSIFIED - [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R36/37/38
Thiourea	62-56-6	200-543-5	0580	1 - 5%	HAZARD CLASSIFICATION: Carc. Cat 3, Repr Cat 3, [Xn] Harmful RISK PHRASES: R40, R63, R22
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250, 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.



SAFETY DATA SHEET

ULTRAPURE

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable

Not Applicable

Lower (LEL): Not Applicable Upper (UEL): Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

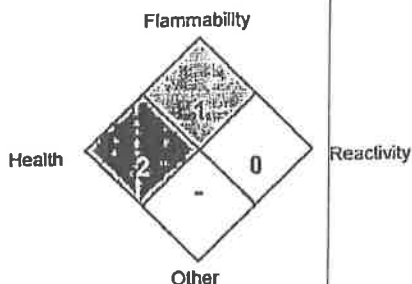
None known

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			2
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.



SAFETY DATA SHEET

ULTRAPURE

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Proprietary Ingredient	Proprietary	Not Listed	Not Listed	Not Listed
Thiourea	62-56-6	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:
APPEARANCE & ODOR:
ODOR THRESHOLD (PPM):
VAPOR PRESSURE (mmHg):
VAPOR DENSITY:
EVAPORATION RATE (nBuAc = 1):
BOILING POINT (C°):
FREEZING POINT (C°):
pH:
SPECIFIC GRAVITY 20°C: (WATER=1)
SOLUBILITY IN WATER (%):
% VOLATILE WEIGHT:

Liquid
Yellow to colorless opaque liquid with a slight odor.
Slight to none
Not Available
Heavier than air
<1
95°C - 105°C (203°F - 221°F)
Not Available
>10.0
1.06
Complete
Not Available

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and bases



SAFETY DATA SHEET

ULTRAPURE

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product

CAS# 62-56-6 Oral LD50

125 mg/kg

Rat

SUSPECTED CANCER AGENT: One of the ingredients is found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is considered to be, or suspected to be a cancer-causing agent by these agencies.

CAS# 62-56-6:

IARC: Group 2 (Possibly carcinogenic to humans; limited human evidence or sufficient animal evidence)

NTP: Group 2 (Reasonably anticipated to be a carcinogen)

DFG: (MAK-B) Justifiably suspected of having carcinogenic potential

European Commission: Suspected of being a carcinogen

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skinsensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT: IATA: IMO: ADR:

THIS PRODUCT IS CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Environmentally Hazardous Substance, Liquid, n.o.s. (Contains Thiourea)

HAZARD CLASS NUMBER and DESCRIPTION: Class 9 Environmentally Hazardous Substance

UN IDENTIFICATION NUMBER: UN3082

PACKING GROUP: PGIII

DOT LABEL(S) REQUIRED: Class 9 Environmentally Hazardous Substance

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): 171

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)



SAFETY DATA SHEET

ULTRAPURE

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS

This product is classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

SARA 302: RQ CAS# 62-56-6 10Lbs.

SARA 313: This product contains Thiourea CAS# 62-56-6 1 - 5% and is subject to reporting requirements

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute: Yes

Chronic Health: Yes

Fire: No

Reactivity: No

Health:

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): CAS# 62-56-6 10 Lbs.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): One of the ingredients is on the California Proposition 65 lists.

WARNING! This product contains an ingredient that is known to the State of California to cause cancer or reproductive harm.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI



SAFETY DATA SHEET

ULTRAPURE

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:

Listed

Australian Inventory of Chemical Substances (AICS):

Listed

Korean Existing Chemicals List (ECL):

Listed

Japanese Existing National Inventory of Chemical Substances (ENCS):

Listed

Philippines Inventory of Chemicals and Chemical Substances (PICCS):

Listed

Swiss Giftliste List of Toxic Substances:

Listed

U.S. TSCA:

Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

MSDS Authoring PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.



SAFETY DATA SHEET

HYPRO YELLOW UVS

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HYPRO YELLOW UVS
PRODUCT CODE: LD103
CHEMICAL FAMILY NAME: Mixture
U.N. NUMBER: None
U.N. DANGEROUS GOODS CLASS: Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME: PAVCO INC
ADDRESS: 1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE: TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE: 1-704-496-6800 (Product Information)
BUSINESS FAX: 1-704-496-6810
WEB SITE: www.pavco.com
DATE OF PREPARATION: December 10, 2013
DATE OF LAST REVISION: October 15, 2007

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a yellow orange liquid with no odor.
Health Hazards: Prolonged or repeated exposure to this product may cause skin irritation. Contact with eyes may cause severe irritation. Ingestion may cause gastrointestinal discomfort. Inhalation of vapor or mist may cause respiratory irritation.

Flammability Hazards: This product is Non-Flammable with a flash point greater than 200°F

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment. However, release of this product is not expected to have adverse long lasting environmental effects.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated Material

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Warning!

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 231-791-2 This substance is not classified in the Annex I of Directive 67/548/EEC

CAS# 10102-40-6 is not listed in ESIS

EC# 215-239-8 Annex I Index# 023-001-00-8

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Mutagenicity Toxicity Category 2

Reproductive Toxicity Category 2

Skin Corrosive/Irritation Category 2

STOT RE Category 1

Serious Eye damage/Irritation Category 2B

Hazard Statement(s):

H302: Harmful if swallowed

H315: Causes skin irritation

H319: Causes serious eye irritation

H333: May be harmful if inhaled

H341: Suspected of causing genetic defects

H361: Suspected of damaging fertility or the unborn child

Precautionary Statement(s):

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection



SAFETY DATA SHEET

HYPRO YELLOW UVS

H372: Causes damage to organs through prolonged or repeated exposure

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[T] Toxic, [Xn] Harmful, [Xi] Irritant

Risk Phrases:

R48/23: Danger of serious damage to health by prolonged exposure through inhalation

R20: Harmful by inhalation

R22: Harmful if swallowed

R36/37/38: Irritating to eyes, respiratory system and skin

Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S36/37/38: Wear suitable protective clothing, gloves and eye/face protection

S45: In case of accident or if you feel unwell, seek medical advice immediately

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Contact with eyes may cause severe irritation with redness and pain.

SKIN CONTACT: Prolonged or repeated contact may cause irritation.

INHALATION HAZARDS: Inhalation of vapor or mist may cause respiratory irritation.

INGESTION HAZARDS: May cause gastrointestinal irritation if swallowed

CHRONIC: None known

TARGET ORGANS:

ACUTE: Eye, Skin

CHRONIC: None known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	80 - 90%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium Molybdate Dihydrate	10102-40-6	Not Listed in EINECS	Not Listed	1 - 10%	HAZARD CLASSIFICATION: [Xi] Irritant RISK PHRASES: R36/38
Vanadium Pentoxide	1314-62-1	215-239-8	0595	<5%	HAZARD CLASSIFICATION: [T] Toxic, [Xn] Harmful, [Xi] Irritant RISK PHRASES: R48/23, R20/22, R37
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the GHS and the MSDS contains all the information required by the GHS, EU Directives and the Japanese Industrial Standard JIS Z 7250, 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation or blurred vision occurs.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin or respiratory problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SAFETY DATA SHEET

HYPRO YELLOW UVS

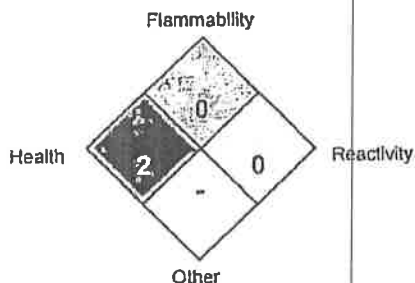
SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:
AUTOIGNITION TEMPERATURE:
FLAMMABLE LIMITS (in air by volume, %):
FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Explosion Sensitivity to Mechanical Impact:
Explosion Sensitivity to Static Discharge:
SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable >200°F
Not Applicable
Lower (LEL): Not Applicable Upper (UEL): Not Applicable
Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.
None known
Not Sensitive.
Not Sensitive
Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			0
PHYSICAL HAZARD (YELLOW)			1
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.
SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.
Notify proper authorities if required by local, state, or federal regulations.
Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.
STORAGE AND HANDLING PRACTICES: Store in a cool well ventilated location in original container. Protect from physical damage. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.



SAFETY DATA SHEET

HYPRO YELLOW UVS

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Sodium Molybdate Dihydrate	10102-40-5	0.5 mg/m ³ as Mo	5 mg/m ³ as Mo	5 mg/m ³ as Mo
Vanadium Pentoxide	1314-62-7	0.05 mg/m ³	0.1 mg/m ³	0.05 mg/m ³

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable.

If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE & ODOR:	Yellow orange liquid with no odor.
ODOR THRESHOLD (PPM):	None
VAPOR PRESSURE (mmHg):	Not Available
VAPOR DENSITY:	Not Available
EVAPORATION RATE (nBuAc = 1):	Not Available
BOILING POINT (C°):	95°C - 105°C (203°F - 221°F)
FREEZING POINT (C°):	Not Available
pH:	>8.5
SPECIFIC GRAVITY 20°C: (WATER=1)	1.08
SOLUBILITY IN WATER (%)	Complete
% VOLATILE WEIGHT:	None

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon and other toxic fumes.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known



SAFETY DATA SHEET

HYPRO YELLOW UVS

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product

Vanadium Pentoxide CAS# 1314-62-1:

Acute oral toxicity (LD50): 5 mg/kg [Mouse].

Acute dermal toxicity (LD50): 50 mg/kg [Rabbit].

Acute toxicity of the dust (LC50): 126 mg/m 6 hours [Rat]. 3

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin and eyes.

SENSITIZATION OF PRODUCT: This product does not contain an ingredient that is considered a skin and respiratory sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: May cause adverse reproductive effects and birth defects (teratogenic). May affect genetic material (mutagenic)

NOTE: The major target for Vanadium Pentoxide toxicity is the respiratory tract. It is an irritant of the eyes, nose, throat, and respiratory tract at 0.1 mg/m³ or greater. Bronchitis, nasal discharge, sore throat, shortness of breath or dyspnea, rales, chest pain, and productive cough(phlegm) can occur following acute exposure, with effects sometimes being delayed by several days and lasting up to 2 weeks. Higher exposures can produce bronchopneumonia, and pulmonary edema. Vanadium pentoxide can be absorbed through the lungs. Acute inhalation may also cause liver damage and kidney damage, and affect behavior/central nervous system (ataxia). A green tongue may occur with high-level acute exposure of Vanadium compounds. Larger acute exposure by inhalation can produce effects on the nervous system, including paralysis, respiratory depression, and convulsions, but these generally occur only in fatal exposures. Vanadium Pentoxide is a powerful vasoconstrictor and can cause renal hypertension. Ingestion: It is not anticipated to be a significant route of overexposure since it is poorly absorbed from the digestive tract. Ingestion of Vanadium Pentoxide can produce gastrointestinal disturbances such as abdominal cramps, nausea, vomiting, and diarrhea. It may also affect behavior/central and cause dizziness, headache, drowsiness, and unconsciousness.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT: IATA: IMO: ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: None

UN IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant



SAFETY DATA SHEET

HYPRO YELLOW UVS

(as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS

This product is not classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

SARA 302 TPQ: Vanadium Pentoxide CAS# 1314-62-1: 100 Lbs

SARA 304 RQ: Vanadium Pentoxide CAS# 1314-62-1: 1,000 Lbs

SARA 313 Reporting: Vanadium Pentoxide CAS# 1314-62-1: <5%

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes

Chronic Health: No

Fire: No

Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Vanadium Pentoxide CAS# 1314-62-1: 1,000 Lbs

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): One or more of the ingredients is on the California Proposition 65 lists.

WARNING! This product contains ingredients that are known to the State of California to cause cancer of reproductive harm.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a class D – Division 2 Materials causing other toxic effects, as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No 1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.



SAFETY DATA SHEET

HYPRO YELLOW UVS

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:	
Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftlist List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

MSDS Authoring PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.



SAFETY DATA SHEET

HYPROTEC

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	HYPROTEC
PRODUCT CODE:	ZC1405R
CHEMICAL FAMILY NAME:	Mixture
U.N. NUMBER:	UN3264
U.N. DANGEROUS GOODS CLASS:	Class 8, Corrosive liquid, Acidic, Inorganic, n.o.s. (Contains Ammonium Bifluoride), PG II
SUPPLIER/MANUFACTURER'S NAME:	PAVCO INC
ADDRESS:	1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA
EMERGENCY PHONE:	TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec
BUSINESS PHONE:	1-704-496-6800 (Product Information)
BUSINESS FAX:	1-704-496-6810
WEB SITE:	www.pavco.com
DATE OF PREPARATION:	October 22, 2012
DATE OF LAST REVISION:	October 22, 2012

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a blue/green liquid with a slight odor.

Health Hazards: Prolonged or repeated exposure to this product may cause skin and/or respiratory irritation. Contact with eyes may cause severe irritation and/or burns. Ingestion may cause nausea, diarrhea, and gastrointestinal discomfort.

Flammability Hazards: This product is Non-Flammable

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Danger!

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI

EC# 231-791-2 This substance is not classified in the Annex VI of Directive 67/548/EEC

EC# 235-595-8 This substance is not classified in the Annex VI of Directive 67/548/EEC

EC# 231-714-2 Index# 007-004-00-1

CAS# 10026-24-1 is not listed in ESIS

EC# 215-676-4 Index# 009-009-00-4

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Acute Oral Toxicity Category 4

Skin Corrosive Category 1B



VERBODEN VERKOPEN

SAFETY DATA SHEET

HYPROTEC

Hazard Statement(s):

H302: Harmful if swallowed
H314: Causes severe skin burns and eye damage
H320: Causes eye irritation
H333: May be harmful if inhaled

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[C] Corrosive, [Xn] Harmful, [Xi] Irritant

Risk Phrases:

R22: Harmful if swallowed
R34: Causes burns
R36/37/38: Irritating to eyes, respiratory system and skin

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Corrosive. Eye exposure may produce severe irritation and chemical burns.
SKIN CONTACT: Can be moderately corrosive. Contact may not cause symptoms for several hours.
INHALATION HAZARDS: May be irritating to the respiratory tract.
INGESTION HAZARDS: Can cause spontaneous vomiting, chest and abdominal pain, and difficulty swallowing with drooling. Corrosive injury to the mouth, throat, esophagus, and stomach may result in perforation, hemorrhage, and narrowing of the gastrointestinal tract.

CHRONIC: None Known

TARGET ORGANS:

ACUTE: Eye, respiratory System, Skin

CHRONIC: None Known

Precautionary Statement(s):

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Phrases:

S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S46: If swallowed, seek medical advice immediately and show container or label.

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	40 - 50%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Basic Chrome Sulfate	12336-95-7	235-595-6	1309	20 - 30%	HAZARD CLASSIFICATION:SELF CLASSIFIED - [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R36/37/38
Nitric Acid	7697-37-2	231-714-2	0183	10 - 15%	HAZARD CLASSIFICATION: [C] Corrosive RISK PHRASES: R34
Cobalt Sulfate	10026-24-1	Not Listed in ECS	Not Listed	<5%	HAZARD CLASSIFICATION:SELF CLASSIFIED - [Xn] Harmful, [Xi] Irritant RISK PHRASES: R22, R36/37/38
Ammonium Bifluoride	1341-49-7	215-676-4	Not Listed	<5%	HAZARD CLASSIFICATION: [C] Corrosive, [Xn] Harmful; RISK PHRASES: R34, R22
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek immediate medical attention.
SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

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INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or respiratory system problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

Non-Flammable

Not Applicable

Lower (LEL): Not Applicable Upper (UEL): Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.

Material may splatter when water is first applied. Material will heat up with the addition of water.

Not Sensitive.

Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

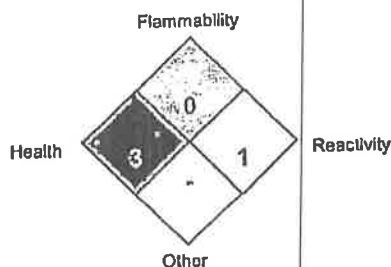
HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)		3
FLAMMABILITY HAZARD (RED)		0
PHYSICAL HAZARD (YELLOW)		1
PROTECTIVE EQUIPMENT		
EYES	RESPIRATORY	HANDS
	See Sect 8	
		See Sect 8

For Routine Industrial Use and Handling Applications

NFPA RATING SYSTEM



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.

Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).



SILVERMIST DISTRICT

SAFETY DATA SHEET**HYPROTEC****SECTION 7 - HANDLING and STORAGE**

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool place in original container and protect from sunlight. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION**EXPOSURE LIMITS/GUIDELINES:**

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Basic Chrome Sulfate	12336-35-7	Not Listed	Not Listed	Not Listed
Nitric Acid	7697-37-2	2 ppm	2 ppm	2 ppm
Cobalt Sulfate	10026-24-1	0.02 mg/m ³	0.1 mg/m ³	0.02 mg/m ³
Ammonium Bifluoride	1341-9-7	Not Listed	Not Listed	Not Listed

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:
APPEARANCE & ODOR:
ODOR THRESHOLD (PPM):
VAPOR PRESSURE (mmHg):
VAPOR DENSITY:
EVAPORATION RATE (nBuAc = 1):
BOILING POINT (C°):
FREEZING POINT (C°):
pH:
SPECIFIC GRAVITY 20°C: (WATER =1)

Liquid
 Blue/green liquid with a slight odor.
 Slight
 Not Available
 Not Available
 Not Available
 95°C - 105°C (203°F - 221°F)
 Not Available
 <4.5
 1.41

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SOLUBILITY IN WATER (%)
% VOLATILE WEIGHT:

Complete
None

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon, nitrogen and chrome.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Reacts with bases, and metals, such as iron, and zinc.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product

CAS# 7697-37-2 Oral LD50 1267 mg/kg Rat

CAS# 12336-95-7 Oral LD 50 7760 mg/kg Rat

CAS# 10026-24-1 Oral LD50 582 mg/kg Rat

SUSPECTED CANCER AGENT: One or more of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore are considered to be, nor suspected to be a cancer-causing agent by these agencies.

Cobalt Sulfate (Listed as Cobalt)

CAS# 10026-24-1

ACGIH: A3

IARC: 2B

CAS# 7697-37-2

IARC: 2A

CAS# 1341-49-7

IARC: 3

CAS# 12336-95-7

IARC: 3

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.

SENSITIZATION OF PRODUCT: This product is not considered a skin sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product, however this product should be considered as having possible adverse effects to the environment.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known



SAFETY DATA SHEET

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EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Corrosive liquid, acidic, Inorganic, n.o.s. (Contains Ammonium Bifluoride)

HAZARD CLASS NUMBER and DESCRIPTION: Class 8 Corrosive

UN IDENTIFICATION NUMBER: UN3264

PACKING GROUP: PGII

DOT LABEL(S) REQUIRED: Corrosive

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): 154

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is classified as Dangerous Goods per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is classified as Dangerous Goods by rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

SARA 313 Reporting CAS# 12336-95-7 20-30%, CAS# 7697-37-2 10-15%, CAS# 1341-49-7 1-5%,
TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute: Yes
Health:

Chronic Health: Yes

Fire: No

Reactivity: Yes

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): CAS# 7697-37-2 1,000 Lbs.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): One or more of the ingredients are on the California Proposition 65 lists. Cobaltous Sulfate, heptahydrate.

WARNING: This product contains ingredients that are known to the State of California to cause cancer or reproductive harm.

CANADIAN REGULATIONS

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Class D Division 2B Materials causing other toxic effects and Class E Corrosive materials, as per the Controlled Product Regulations



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EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett

GHS MSDS Compliance PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet



SAFETY DATA SHEET

HYPRO FE INH

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **HYPRO FE INH**
PRODUCT CODE: **FEINHR**
CHEMICAL FAMILY NAME: **Mixture**
U.N. NUMBER: **None**
U.N. DANGEROUS GOODS CLASS: **Non-Regulated Material**
SUPPLIER/MANUFACTURER'S NAME: **PAYCO INC**
ADDRESS: **1935 John Crosland Jr. Dr, Charlotte, NC 28208 USA**
EMERGENCY PHONE: **TOLL-FREE in USA/Canada 1-800-424-9300 Chemtrec**
BUSINESS PHONE: **1-704-496-6800 (Product Information)**
BUSINESS FAX: **1-704-496-6810**
WEB SITE: **www.pavco.com**
DATE OF PREPARATION: **March 10, 2015**
DATE OF LAST REVISION: **September 17, 2013**

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Product Description: This product is a green to violet liquid with a slight odor.

Health Hazards: May be harmful if swallowed. Contains ingredients that can cause target organ damage. Suspected cancer hazard.

Flammability Hazards: This product is Non-Flammable with a flash point greater than 200°F

Reactivity Hazards: None known.

Environmental Hazards: No data available on this product and its effects on aquatic life if released into the environment. However, release of this product is not expected to have adverse long lasting environmental effects.

Emergency Considerations: Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS

Non-Regulated Material

CANADA (WHMIS) SYMBOLS



EUROPEAN and (GHS) Hazard Symbols



Signal Word: Danger!

GHS LABELING AND CLASSIFICATION:

CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex VI

EC# 231-791-2 This substance is not classified in the Annex I of Directive 67/548/EEC

EC# 202-506-9 Annex I Index# 613-039-00-9

Substances not listed either individually or in group entries must be self classified.

GHS Hazard Classification(s):

Reproductive Toxicity Category 1B

Acute Oral Toxicity Category 4

Hazard Statement(s):

H360: May damage fertility or the unborn child

H302: Harmful if swallowed

Precautionary Statement(s):

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection

EU HAZARD CLASSIFICATION PER DIRECTIVE 1999/45/EC:

[Xi] Irritant

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SAFETY DATA SHEET

HYPRO FE INH

Risk Phrases:

R61: May cause harm to the unborn child
R22: Harmful if swallowed

Safety Phrases:

S24/25: Avoid contact with skin and eyes.
S36/37/38: Wear suitable protective clothing, gloves and eye/face protection
S45: In case of accident or if you feel unwell, seek medical advice immediately

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE:

EYE CONTACT: Not expected to have adverse effects

SKIN CONTACT: Not expected to have adverse effects

INHALATION HAZARDS: Inhalation of vapor or mist may cause respiratory irritation. Prolonged exposure may cause delayed effects.

INGESTION HAZARDS: Harmful if swallowed with possible damage to target organs.

CHRONIC: None known

TARGET ORGANS:

ACUTE: Respiratory system,
Reproductive system, Thyroid

CHRONIC: Respiratory system,
Reproductive system, Thyroid

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Water	7732-18-5	231-791-2	Not Listed	90 - 99%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Ethylene Thiourea	96-45-7	202-506-9	1148	<3%	HAZARD CLASSIFICATION: Repr. Cat 2 [Xn] Harmful RISK PHRASES: R61, R22
Balance of other ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers)					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000

SECTION 4 - FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation or blurred vision occurs.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin problems may be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT:

AUTOIGNITION TEMPERATURE:

FLAMMABLE LIMITS (in air by volume, %):

FIRE EXTINGUISHING MATERIALS:

Non-Flammable >200°F

Not Applicable

Lower (LEL): Not Applicable **Upper (UEL):** Not Applicable

Use media suitable for surrounding area. Carbon dioxide, foam, dry chemical, halon, water spray.



SAFETY DATA SHEET

HYPRO FE INH

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Explosion Sensitivity to Mechanical Impact:

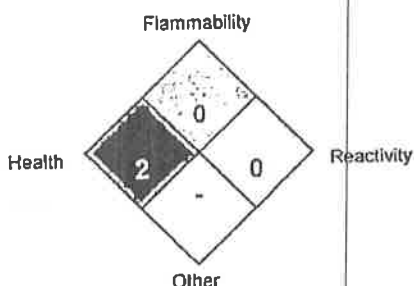
Explosion Sensitivity to Static Discharge:

SPECIAL FIRE-FIGHTING PROCEDURES:

None known
Not Sensitive.
Not Sensitive

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			2
FLAMMABILITY HAZARD (RED)			0
PHYSICAL HAZARD (YELLOW)			1
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.

SPILLS: SMALL SPILL: Absorb material with rags, floor absorbent, vermiculite, or other absorbent material and transfer to an appropriate container. LARGE SPILL: Dike the area of the spill to prevent spreading. The material may then be taken up with vacuum or absorbent material and transferred to appropriate containers.

Notify proper authorities if required by local, state, or federal regulations.
Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store in a cool well ventilated location in original container. Protect from physical damage. For storage & usage, it is important to take special notice of the shelf life of this product which is provided on the Cert. of Analysis.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	WEEL
Water	7732-18-5	Not Listed	Not Listed	Not Listed
Ethylene Thiourea	96-45-7	Not Listed	Not Listed	Not Listed



Substrate Resistant

SAFETY DATA SHEET

HYPRO FE INH

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable.

If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE & ODOR:	Green to violet liquid with a slight odor.
ODOR THRESHOLD (PPM):	None
VAPOR PRESSURE (mmHg):	Not Available
VAPOR DENSITY:	Not Available
EVAPORATION RATE (nBuAc = 1):	Not Available
BOILING POINT (C°):	95°C - 105°C (203°F - 221°F)
FREEZING POINT (C°):	Not Available
pH:	<4.0
SPECIFIC GRAVITY 20°C: (WATER =1)	1.01
SOLUBILITY IN WATER (%):	Complete
% VOLATILE WEIGHT:	None ✓

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable

DECOMPOSITION PRODUCTS: When heated to decomposition this product produces oxides of carbon.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: None known

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is not available for this product

CAS# 96-45-7:

Draize test, rabbit, eye: 500 mg/24H Mild;

Oral, mouse: LD50 = 3 gm/kg;

Oral, rat: LD50 = 1832 mg/kg;

SUSPECTED CANCER AGENT: One of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is considered to be, or suspected to be a cancer-causing agent by these agencies.

CAS# 96-45-7 IARC: Group 3, CAL/OSHA: Carcinogen

IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin and eyes.



SAFETY DATA SHEET

HYPRO FE INH

SENSITIZATION OF PRODUCT: This product does not contain an ingredient that is considered a skin and respiratory sensitizer.

REPRODUCTIVE TOXICITY INFORMATION: Ingredients contained in this product may cause reproductive harm.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: No specific data is available for this product.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

RCRA WASTE CODE: Not Known

EU WASTE CODE: Not known - Dependent on use and contamination

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT CLASSIFIED AS DANGEROUS GOODS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Non-Regulated Material

HAZARD CLASS NUMBER and DESCRIPTION: None

UN IDENTIFICATION NUMBER: None

PACKING GROUP: None

DOT LABEL(S) REQUIRED: None

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): None

MARINE POLLUTANT: This product does not contain ingredients that are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

This product is not classified as Dangerous Goods, per regulations of Transport Canada

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:

This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

(ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

SARA 302 TPQ: None

SARA 304 RQ: None

SARA 313 Reporting: CAS# 96-45-7 <3%

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes

Chronic Health: No

Fire: No

Reactivity: No



ALUMINUM EXTRUSION

SAFETY DATA SHEET

HYPRO FE INH

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): CAS# 96-45-7 10 Lbs RQ.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): One of the ingredients is on the California Proposition 65 lists.

WARNING! This product contains ingredients known to the State of California to cause cancer or reproductive harm.

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as Class D2B Materials having other toxic effects, as per the Controlled Product Regulations.

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:

Australian Inventory of Chemical Substances (AICS):

Listed

Korean Existing Chemicals List (ECL):

Listed

Japanese Existing National Inventory of Chemical Substances (ENCS):

Listed

Philippines Inventory of Chemicals and Chemical Substances (PICCS):

Listed

Swiss Giftliste List of Toxic Substances:

Listed

U.S. TSCA:

Listed

Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Elgbrett

MSDS Authoring PLUS

Disclaimer:

The suggestions and data provided herewith are based upon tests which Pavco Inc. believes to be reliable. However, we make no guarantee with respect thereto and assume no liability resulting from the use thereof. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Furthermore, nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

End of SDS Sheet

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260 Dennis
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DIVISION OF AIR POLLUTION CONTROL
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