

Thomas & Betts

A Member of the ABB Group

Thomas & Betts
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October 31, 2016

54-0047

State of Tennessee Department of Environment and Conservation
Attn: Barry Stevens
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Dear Mr. Stevens,

The purpose of this letter is to inform you that the Thomas & Betts Corporation, Athens, TN facility presently intends to introduce a new process to our manufacturing facility. In early 2017, we intend to begin the manufacture of flexible conduit (PMA) used to carry electrical wiring. The manufacturing process used to produce this product includes the extrusion of plastic material (Polyamide 6, Polyethylene). Attached are copies of the MSDS of the chemicals to be utilized on this new process. Butanone (methyl ethyl ketone) is deleted from the list of hazardous air pollutants under section 40 CFR 63.61.

Thomas & Betts believes that this process is exempt from permitting and/or registration requirements under section 1200-3-9-.04(j) and 1200-3-9.04(5) (f) (51) of Tennessee Air Regulations.

To ensure that we are in compliance with applicable regulations, we would appreciate written confirmation.

Sincerely;



Chuck Gilreath
Plant Manager for Thomas & Betts, Athens

Cc: Amelia Poe, Chattanooga Field Office

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Name : 70000-00195 Black Ink
Product code : 70000-00195
Synonyms : 70000-00195-Q

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Ink for printing processes

1.3. Details of the supplier of the safety data sheet

Paul Leibinger Inc.
2702 Buell Drive, Suite B
East Troy, WI 53120
United States of America

Phone: 262-642-4030

Fax: 262-642-4033

1.4. Emergency telephone number

Country	Organization/Company	Address	Emergency number
UNITED STATES OF AMERICA	Chemtrec		1 800 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 2 H225

Eye Dam. 1 H318

STOT SE 3 H336

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US)

: P210 - Keep away from heat, open flames, sparks. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
butanone	(CAS No) 78-93-3	40-90	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
1-methoxy-2-propanol	(CAS No) 107-98-2	1-10	Flam. Liq. 3, H226 STOT SE 3, H336
Amines, C12-14-tert-alkyl, compds. with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol-1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes	(CAS No) 117527-94-3	<=10	Aquatic Chronic 2, H411
isopropanol	(CAS No) 67-63-0	<=8	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
polyvinylpyrrolidone	(CAS No) 9003-39-8	<=8	Not classified
Dipotassium oxide	(CAS No) 7732-18-5	<=5	Not classified
ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate	(CAS No) 687-47-8	<=5	Flam. Liq. 3, H226 Eye Dam. 1, H318 STOT SE 3, H335

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause drowsiness or dizziness.
- Symptoms/injuries after eye contact : Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapor.
- Explosion hazard : May form flammable/explosive vapor-air mixture.
- Reactivity : The product is stable at normal handling and storage conditions.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing fume, vapors.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid breathing fume, Vapors.

Hygiene measures : Wash Skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof Flame proof, lighting, electrical equipment and ventilation equipment.

Storage conditions : Keep in fireproof place. Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat-ignition.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

70000-00195 Black Ink		
ACGIH	Not applicable	
OSHA	Not applicable	
butanone (78-93-3)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	300 ppm
ACGIH	Remark (ACGIH)	URT irr; CNS & PNS impair
OSHA	OSHA PEL (TWA) (mg/m³)	590 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
1-methoxy-2-propanol (107-98-2)		
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	ACGIH STEL (ppm)	100 ppm
ACGIH	Remark (ACGIH)	Eye irr; CNS impair; A4

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1-methoxy-2-propanol (107-98-2)		
OSHA	Not applicable	
isopropanol (67-63-0)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	400 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; CNS impair
OSHA	OSHA PEL (TWA) (mg/m³)	980 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm
polyvinylpyrrolidone (9003-39-8)		
ACGIH	ACGIH TWA (mg/m³)	3 mg/m³
OSHA	Not applicable	
Diprotium oxide (7732-18-5 .)		
ACGIH	Not applicable	
OSHA	Not applicable	
Amines,C12-14-tert-alkyl, compds. with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol-1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes (117527-94-3)		
ACGIH	Not applicable	
OSHA	Not applicable	
ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation.

Personal protective equipment

: Protective goggles. Gloves.



Hand protection

: Wear protective gloves.

Eye protection

: Chemical goggles or safety glasses.

Respiratory protection

: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

Other information

: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Black
Odor	: Slight;characteristic
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: ≥ -139 °C
Freezing point	: No data available
Boiling point	: 79,6 - 154 °C
Flash point	: -9 °C
Auto-ignition temperature	: No data available

EN (English US)

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Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 12,132 kPa
Relative vapor density at 20 °C	: 3,11
Relative density	: No data available
Specific gravity / density	: 0,9 - 1,1 g/cm ³
Solubility	: In water, material is partially soluble. Water: Solubility in water of component(s) of the mixture : • butanone, ethyl methyl ketone: 28 g/100ml • 1-methoxy-2-propanol, monopropylene glycol methyl ether: • propan-2-ol, isopropyl alcohol, isopropanol: • : > 30 g/100ml • ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate:
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: 1,8 - 10 vol %

9.2. Other information

VOC content	: 89,5 %
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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable at normal handling and storage conditions.

10.2. Chemical stability

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified (Based on available data, the classification criteria are not met)
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butanone (78-93-3)	
LD50 oral rat	2737 mg/kg (Rat; Equivalent or similar to OECD 423; Read-across; 2054 mg/kg; Rat; Equivalent or similar to OECD 423; Read-across; 2328 mg/kg; Rat)
LD50 dermal rabbit	6480 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 402; >10; Rabbit)
LC50 inhalation rat (mg/l)	34 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	11300 ppm/4h (Rat; Literature study)
ATE US (oral)	2737,000 mg/kg body weight
ATE US (dermal)	6480,000 mg/kg body weight
ATE US (gases)	11300,000 ppmV/4h
ATE US (vapors)	34,000 mg/l/4h
ATE US (dust, mist)	34,000 mg/l/4h

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1-methoxy-2-propanol (107-98-2)	
LD50 oral rat	6600 mg/kg (Rat; Other; Literature study; 4016 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 2000 mg/kg body weight (Rat; Experimental value; Other)
LD50 dermal rabbit	13000 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	55 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	15000 ppm/4h (Rat; Literature study)
ATE US (oral)	6600,000 mg/kg body weight
ATE US (dermal)	13000,000 mg/kg body weight
ATE US (gases)	15000,000 ppmV/4h
ATE US (vapors)	55,000 mg/l/4h
ATE US (dust, mist)	55,000 mg/l/4h

isopropanol (67-63-0)	
LD50 oral rat	5045 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 5840 mg/kg bodyweight; Rat)
LD50 dermal rabbit	12870 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 402; 16.4; Rabbit)
LC50 inhalation rat (mg/l)	73 mg/l/4h (Rat)
ATE US (oral)	5045,000 mg/kg body weight
ATE US (dermal)	12870,000 mg/kg body weight
ATE US (vapors)	73,000 mg/l/4h
ATE US (dust, mist)	73,000 mg/l/4h

polyvinylpyrrolidone (9003-39-8)	
LD50 oral rat	100000 mg/kg (Rat)
LD50 dermal rat	> 12000 mg/kg (Rat)
ATE US (oral)	100000,000 mg/kg body weight

ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)	
LD50 oral rat	> 5000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; >2000 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit; Literature study)

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)

isopropanol (67-63-0)	
IARC group	3 - Not classifiable
polyvinylpyrrolidone (9003-39-8)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: Not classified (Based on available data, the classification criteria are not met)

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Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after eye contact	: Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

butanone (78-93-3)	
LC50 fish 1	1690 mg/l (96 h; <i>Lepomis macrochirus</i> ; Lethal)
EC50 Daphnia 1	308 mg/l (48 h; <i>Daphnia magna</i> ; Locomotor effect)
LC50 fish 2	2990 mg/l (96 h; <i>Pimephales promelas</i>)
TLM fish 1	5600 mg/l (96 h; <i>Gambusia affinis</i>)
TLM fish 2	1690 mg/l (96 h; <i>Lepomis macrochirus</i>)
TLM other aquatic organisms 1	> 1000 ppm (96 h)
Threshold limit algae 1	110 mg/l (168 h; <i>Microcystis aeruginosa</i>)
Threshold limit algae 2	4300 mg/l (192 h; <i>Scenedesmus quadricauda</i>)

1-methoxy-2-propanol (107-98-2)	
LC50 fish 1	4600 - 10000 mg/l (96 h; <i>Leuciscus idus</i> ; Nominal concentration)
EC50 Daphnia 1	23300 mg/l (48 h; <i>Daphnia magna</i> ; Nominal concentration)
LC50 fish 2	20800 mg/l (96 h; <i>Pimephales promelas</i>)
Threshold limit algae 1	> 1000 mg/l (168 h; <i>Pseudokirchneriella subcapitata</i> ; Growth rate)

isopropanol (67-63-0)	
LC50 fish 1	4200 mg/l (96 h; <i>Rasbora heteromorpha</i> ; Flow-through system)
EC50 Daphnia 1	> 10000 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	9640 mg/l (96 h; <i>Pimephales promelas</i> ; Lethal)
EC50 Daphnia 2	13299 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	> 1000 mg/l (72 h; <i>Scenedesmus subspicatus</i> ; Growth rate)
Threshold limit algae 2	1800 mg/l (72 h; Algae; Cell numbers)

polyvinylpyrrolidone (9003-39-8)	
LC50 fish 1	> 10000 mg/l (96 h; <i>Leuciscus idus</i>)

ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)	
LC50 fish 1	320 mg/l (96 h; <i>Brachydanio rerio</i>)
LC50 other aquatic organisms 1	100 - 1000 mg/l (96 h)
EC50 Daphnia 1	683 mg/l (48 h; <i>Daphnia magna</i> ; GLP)
LC50 fish 2	100 - 1000 mg/l (96 h; Pisces)
TLM fish 1	100 - 1000,96 h; Pisces
TLM other aquatic organisms 1	100 - 1000,96 h
Threshold limit other aquatic organisms 1	100 - 1000,96 h
Threshold limit algae 1	320 mg/l (72 h; <i>Selenastrum capricornutum</i>)
Threshold limit algae 2	3500 mg/l (72 h; <i>Selenastrum capricornutum</i> ; Growth rate)

12.2. Persistence and degradability

70000-00195 Black Ink	
Persistence and degradability	Not established.
butanone (78-93-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in soil. Biodegradable in soil in anaerobic condition.
Biochemical oxygen demand (BOD)	1,92 g O ₂ /g substance
Chemical oxygen demand (COD)	2,31 g O ₂ /g substance

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butanone (78-93-3)	
ThOD	2,44 g O ₂ /g substance
BOD (% of ThOD)	> % ThOD (5 day(s)) > 0.5
1-methoxy-2-propanol (107-98-2)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in soil. No (test)data available on mobility of the substance.
ThOD	1,95 g O ₂ /g substance
isopropanol (67-63-0)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in soil. Biodegradable in soil in anaerobic condition. No (test)data available on mobility of the substance.
Biochemical oxygen demand (BOD)	1,19 g O ₂ /g substance
Chemical oxygen demand (COD)	2,23 g O ₂ /g substance
ThOD	2,40 g O ₂ /g substance
BOD (% of ThOD)	0,49 % ThOD
polyvinylpyrrolidone (9003-39-8)	
Persistence and degradability	Not readily biodegradable in water.
Diprotium oxide (7732-18-5.)	
Persistence and degradability	Not established.
ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)	
Persistence and degradability	Readily biodegradable in water. No straightforward conclusion can be drawn based upon the available numerical values.
ThOD	1,35 g O ₂ /g substance

12.3. Bioaccumulative potential

70000-00195 Black Ink	
Bioaccumulative potential	Not established.
butanone (78-93-3)	
Log Pow	0,3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 40 °C)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
1-methoxy-2-propanol (107-98-2)	
BCF fish 1	1 (Pimephales promelas)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
isopropanol (67-63-0)	
Log Pow	0,05 (Experimental value)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
polyvinylpyrrolidone (9003-39-8)	
Bioaccumulative potential	Bioaccumulation: No data available.
Diprotium oxide (7732-18-5.)	
Bioaccumulative potential	Bioaccumulation: Not applicable.
ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)	
Log Pow	0,31 (QSAR; 20 °C; 0,31; QSAR; 20 °C)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).

12.4. Mobility in soil

butanone (78-93-3)	
Surface tension	0,024 N/m (20 °C)
Ecology - soil	Slightly harmful to plants.

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isopropanol (67-63-0)	
Surface tension	0,021 N/m (25 °C)

ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)	
Surface tension	0,07 N/m (20 °C; 1 g/l)

12.5. Other adverse effects

Effect on ozone layer	:
Effect on the global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.


SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a licensed waste centre in accordance with local/regional/national/international regulations.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description	: UN1210 Printing ink, flammable CONTAINS butanone, ethyl methyl ketone(78-93-3) ; 1-methoxy-2-propanol, monopropylene glycol methyl ether(107-98-2) ; propan-2-ol, isopropyl alcohol, isopropanol(67-63-0) ; ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate(687-47-8), 3, II
UN-No.(DOT)	: UN1210
Proper Shipping Name (DOT)	: Printing ink, flammable CONTAINS butanone, ethyl methyl ketone(78-93-3) ; 1-methoxy-2-propanol, monopropylene glycol methyl ether(107-98-2) ; propan-2-ol, isopropyl alcohol, isopropanol(67-63-0) ; ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate(687-47-8)
Hazard Classes (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid 
Packing group (DOT)	: II - Medium Danger
DOT Special Provisions (49 CFR 172.102)	: 149 - When transported as a limited quantity or a consumer commodity, the maximum net capacity specified in 173.150(b)(2) of this subchapter for inner packaging may be increased to 5 L (1.3 gallons). IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized. T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 °C (32 °F).
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 173
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L

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DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Additional information

Other information

: No supplementary information available.

ADR

No additional information available

Transport by sea

UN-No. (IMDG)

: 1210

Proper Shipping Name (IMDG)

: PRINTING INK

Class (IMDG)

: 3 - Flammable liquids

Packing group (IMDG)

: II - substances presenting medium danger

Air transport

UN-No.(IATA)

: 1210

Proper Shipping Name (IATA)

: Printing ink

Class (IATA)

: 3 - Flammable Liquids

Packing group (IATA)

: II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

butanone (78-93-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on the United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's
List of Lists)

5000 lb

1-methoxy-2-propanol (107-98-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

isopropanol (67-63-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on United States SARA Section 313

polyvinylpyrrolidone (9003-39-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Diprotium oxide (7732-18-5 .)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Amines,C12-14-tert-alkyl, compds. with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol-1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes (117527-94-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethyl (S)-2-hydroxypropionate, ethyl L-lactate, ethyl-(S)-lactate (687-47-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

70000-00195 Black Ink

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

15.3. US State regulations

SECTION 16: Other information

Revision date : 03/10/2015

Other information : None.

Full text of H-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard

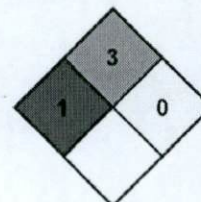
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 3 Serious Hazard

Physical

: 0 Minimal Hazard

Personal Protection

: C

SDS US (GHS HazCom 2012)

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MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 453/2010, Annex I - Europe

Release 3.2b

Date 11.06.2015

PE ANTICOLLAPSE 01205

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

- 1.1. **Identification of the substance or preparation**
Product code: 5101205
Identification of the product: PE ANTICOLLAPSE 01205
- 1.2. **Use of the substance/preparation**
Manufacture of plastics products
- 1.3. **Company/undertaking identification**
Viba S.p.A.
via Mantova, 2 - 21049 Tradate (VA) - ITALY
telefono: +39 0331 687.1
fax: +39 0331 687.541 +39 0331 687.542
e-mail: Viba@vibagroup.com
- 1.4. **Emergency telephone number (8:30-17:00)**
+39 0331 6871

SECTION 2: HAZARDS IDENTIFICATION

- 2.1. **Classification of the substance or mixture**
Classification according to Regulation (EC) No 1272/2008 [CLP]:
The product is not harmful.
H-phrases:
-
P-phrases:
-
- 2.2. **Label elements**
The product does not require a hazard warning label in accordance with CLP criteria
- 2.3. **Other hazards**
Not classified PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1. **Chemical characterization**
Preparation based on: Polyolefinic Polymer
Contains: pigments and/or additives
- 3.2. **Dangerous components**
-

SECTION 4: FIRST AID MEASURES

- 4.1. **Description of first aid measures**
 - 4.1.1. **Inhalation**
In case of exposure and inhalation of vapours generated at high temperatures, immediately remove the injured person to fresh air. If not breathing, give artificial respiration and call the physician.
 - 4.1.2. **Ingestion**
Considered to be practically non-toxic.
 - 4.1.3. **Skin contact**
Wash thoroughly with soap and water. In case of body contact with warm product, immediately put into cold water the injured part and call the physician.
 - 4.1.4. **Eye contact**
Rinse immediately with water for at least 15 minutes.
- 4.2. **Most important symptoms and effects, both acute and delayed**
-
- 4.3. **Indication of any immediate medical attention and special treatment needed**
None.

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation. The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.



MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 453/2010, Annex I - Europe

Release 3.2b

Date 11.06.2015

PE ANTICOLLAPSE 01205

SECTION 5: FIRE FIGHTING MEASURES

- 5.1.a. **Suitable extinguishing media**
Water, CO₂, foam.
- 5.1.b. **Extinguishing media which shall not be used for safety reasons**
-
- 5.2. **Specific hazards**
Thermal decomposition or burning may release oxides of carbon and other toxic gases or vapours. Protect respiratory system. Eliminate water used for extinguishing in accordance to local regulations.
- 5.3. **Special protective equipment for firefighters**
Use full protective clothing for chemicals and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. **Personal precautions**
Usual precautionary measures when handling chemicals must be respected.
- 6.2. **Environmental precautions**
Prevent contamination of soil, drains and surface waters. Inform authorities in case material reaches sewages or rivers.
- 6.3. **Methods for cleaning up**
Take up mechanically and dispose in accordance with local regulations.

SECTION 7: HANDLING AND STORAGE

- 7.1. **Handling**
Handle and open the containers with care. See also 10.1 of the present safety data sheet.
- 7.2. **Storage**
Keep away from heat sources. Store in the original container accurately closed, at room temperature and keep away from humidity.
- 7.3. **Specific use(s)**
Not applicable

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1. **Control parameters**
Product in granular form (not very soluble or insoluble).
- 8.2. **Exposure controls**
 - 8.2.1. **Appropriate engineering controls**
Minimize the generation of airborne dust, use of facilities and systems engineering controls to contain any dust generated during processing of the product.
 - 8.2.2. **Individual protection measures, such as personal protective equipment**
Observe the usual precautionary measures for handling chemicals. The wearing of closed work clothing.
 - a) **Eye / face protection**
Safety glasses with side-shields (frame goggles) (e.g. EN 166).
 - b) **Skin protection**
Chemical resistant protective gloves (EN 374) Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other.
 - c) **Respiratory protection**
in case of vapour/aerosol release usage of particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2).
 - d) **Thermal hazards**
Due to temperature it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
 - 8.2.3. **Environmental exposure controls**
Dispose of waste in accordance with local and national regulations.



MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 453/2010, Annex I - Europe

Release 3.2b

Date 11.06.2015

PE ANTICOLLAPSE 01205

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Granule
Odour:	odourless
Boiling point/boiling range:	°C not applicable
Vapour pressure:	KPA not applicable
Lipid solubility:	not applicable
Viscosity:	cSt not applicable
Evaporation rate:	not applicable

Colour:	Colourless
pH value:	not applicable
Flash point:	°C not applicable
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	not determined
Vapour density:	KPA not applicable

9.2. Other information

Flammability:	°C not applicable
Melting point / softening point:	°C 100-140
Density:	g/cc not determined

Explosive limits:	Vol % not applicable
Decomposition temperature:	-
Relative density:	g/cc 0,6 - 1,2

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No specific reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and used in accordance with the recommendations of Use.

10.3. Possibility of hazardous reactions

not applicable

10.4. Conditions to avoid

Keep away from heat sources.

10.5. Materials to avoid

None.

10.6. Hazardous decomposition products

None if the product is used in compliance with the correct usage procedures.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

In solid granule form the product can't be tested on animals. When the product is used following the instructions, no harmful consequences have been registered yet.

Toxicity data related to most significant substance contained in the product:

a) Acute toxicity: (LD-50)	> 10000 mg/kg
b) Irritation:	not irritant
c) Corrosivity:	not irritant

Mixture

a) Sensitisation:	not sensitizing.
b) Repeated dose toxicity:	not applicable.
c) Carcinogenicity:	not applicable.
d) Mutagenicity:	not applicable.
e) Toxicity for reproduction:	not applicable.

f) Information on likely routes of exposure:

- inhalation:	there were no serious effects.
- ingestion (swallowing):	the amount ingested by accident not likely to cause harmful effects.
- skin exposure:	there were no serious effects.
- eye exposure:	there were no serious effects.

g) Other information:

-



MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 453/2010, Annex I - Europe

Release 3.2b

Date 11.06.2015

PE ANTICOLLAPSE 01205

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. **Toxicity**
We dispose of no data because of the insolubility of the product. Mechanical separation is only possible in purification plants.
- 12.2. **Persistence and degradability**
The product is made from non-biodegradable compounds.
- 12.3. **Bioaccumulative potential**
Not applicable.
- 12.4. **Mobility in soil**
Not relevant.
- 12.5. **Results of PBT and vPvB assessment**
Not classified.
- 12.6. **Other adverse effects**
None known.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. **Waste treatment methods**
Where possible recycling is preferred to disposal. They can be disposed of in accordance with local regulations.

SECTION 14: TRANSPORT INFORMATION

- | | |
|------------------------------|------|
| ADR (road) / RID (rail) | None |
| IMDG (sea) | None |
| ICAO / IATA (air) | None |
| Other applicable information | - |
- 14.1. **UN number**
-
 - 14.2. **UN proper shipping name**
-
 - 14.3. **Transport hazard class(es)**
-
 - 14.4. **Packing group**
-
 - 14.5. **Environmental hazards**
-
 - 14.6. **Special precautions for user**
Not applicable
 - 14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

SECTION 15: REGULATORY INFORMATION

- 15.1. **Standards legislation on health and safety legislation specific for the substance or mixture**
EU regulations:
Regulation (EC) No.1907/2006 (REACH)
Regulation (EC) No 1272/2008 (CLP)
and amendments.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.
Authorisations and/or restrictions on use:



MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 453/2010, Annex I - Europe

Release 3.2b

Date 11.06.2015

PE ANTICOLLAPSE 01205

Permissions:

-

Restrictions on use:

-

Other EU regulations:

-

15.2. Chemical Safety Assessment

No Chemical Safety Assessment (CSA) is yet available for the substance, or for the component substances, contained in this product.

SECTION 16: OTHER INFORMATION

16.1. H phrases referred to SECTION 3

16.2. Date / Revised:

11.06.2015

Editor

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Environmental Safety Office
via Mantova, 2
21049 TRADATE (VA) - ITALY
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+39 0331 6871

16.3. Remarks

-



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MATERIAL SAFETY DATA SHEET according to European Regulation (EC) 1907/2006 and further amendments

MAGNESIUM STEARATE

(powder)

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Substance	MAGNESIUM STEARATE
1.2 substance/ use	Lubricant
1.3 Company identification:	FACI S.p.A. Via Privata Devoto 36 16042 CARASCO (GE) ITALY Telephone no.: +39 0185 36141 Fax no.: +39 0185 350249
- Person responsible for Safety Data Sheet:	Dr. Angelo Nora
- e-mail:	technicalservice@faci.it
1.4 Emergency Telephone no.	+39 0185 36141 (office hours)

2. HAZARDS IDENTIFICATION

- Directive 67/548/EEC: no hazardous
- Physical Hazards: Dust/air mixtures may ignite or explode in presence of sources of ignition
- Carcinogen status: OSHA: no - NTP: no - IARC: No

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Main component	Magnesium salts of commercial stearic acid	
- Average Molecular weight	570	
- INCI Name	MAGNESIUM STEARATE	
- INN	magnesium stearate	
3.2 Directive 1999/45/EC	not classified as dangerous	
3.3 Concentration	98% approx.	
3.4 Additives	none	
3.5 EINECS No.	EINECS name	CAS No.
209-150-3	Octadecanoic acid, magnesium salt	557-04-0
292-967-2	Fatty acids, C ₁₆₋₁₈ , magnesium salts	91031-63-9

4. FIRST AID MEASURES

- Inhalation: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
- Skin contact: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.
- Eye contact: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
- Ingestion: If a large amount is swallowed, get medical attention.



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5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media: regular dry chemical, carbon dioxide, water, regular foam Large fires: Use regular foam or flood with fine water spray. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.
- Special exposure hazards: Slight fire hazard. Powder/air mixture may ignite or explode in presence of ignition sources.
- Special protective equipment for fire-fighters: respiratory protective device, protective clothing.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions: avoid dust formation, do not smoke
- Environmental precautions: keep away from drains and ground water and soil.
- Methods for cleaning up: sweep up spilled substance but avoid making dust. Store in a closed container.

7. HANDLING AND STORAGE

- 7.1 Handling: avoid dust formation and ignition sources.
- 7.2 Storage: store in a cool, dry area at room temperature. Shelf life: 24 months.
- 7.3 Specific use(s): not available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Exposure limit values: not available
- 8.2 Exposure controls: not available
 - 8.2.1 Occupational exposure controls
 - (a) Respiratory protection: respirator for inert particles.
 - (b) Hand protection: gloves
 - (c) Eye protection: safety goggles
 - (d) Skin and body protection: lightweight protective clothing. Use antistatic shoes.
 - General sanitary measures: while working do not eat, drink or smoke, wash hands with soaps and water before breaks. Shower or bathe at the end of the workday. Keep work clothes separate.
 - 8.2.2 Environmental exposure controls: not available



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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information

- | | |
|---------------|----------------|
| - Appearance: | solid, powder |
| - Colour | white |
| - Odour | slightly fatty |

9.2 Important health, safety and environmental information

- | | |
|--|--|
| - pH value (in water solution at 20°C) | 7-9 |
| - Boiling point | not applicable |
| - Flash point | 190°C approx. (C.O.C. method) |
| - Flammability (limits in air) | 15 g/m ³ for particles <74 µm |
| - Explosive property | Mixture powder/air: yes - product: no |
| - Oxidising properties | none |
| - Vapour pressure at 20 °C | not applicable |
| - Density at 70 °C | 1,095 g/cc |
| - Solubility | partially in organic solvents |
| - Water solubility | insoluble |
| - Partition coefficient: n-octanol/water | not available |
| - Viscosity | not applicable |
| - Vapour density | not applicable |
| - Evaporation rate | none |

9.3 Other information

- | | |
|-----------------------------|-----------|
| - Melting point | 130-145°C |
| - Ignition temperature | 410°C. |
| - Decomposition temperature | > 200°C |
| - Bulk density typical | 160 g/l |

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid: Avoid heat, flames, sparks and other sources of ignition.

10.2 Material to avoid: alkalises, oxidizers.

10.3 Hazardous/ Thermal decomposition products: magnesium oxide and carbon monoxide.

- Reactivity: Stable at room temperatures

11. TOXICOLOGICAL INFORMATION

- LD₅₀/oral/rat: > 10 g/kg

12. ECOLOGICAL INFORMATION

- 12.1 Ecotoxicity: not available
12.2 Mobility: not available
12.3 Persistence e degradability: not available
12.4 Bioaccumulative potential: not available
12.5 Results of PBT assessment: not available
12.6 Other adverse effects: not available



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13. DISPOSAL CONSIDERATIONS

- Waste from residues/unused products: can be land-filled. In accordance with local and national regulations.
- Contaminated packaging: in accordance with local and national regulations.

14. TRANSPORT INFORMATION

- Not classified as dangerous in the meaning of transport regulations: IMDG, ADR, RID, ICAO, IATA.

15. REGULATORY INFORMATION

According to our data the product is not harmful within the meaning of the following directives:

- Council Directive 88/379/EEC of 7 June 1988, Commission Directive 90/492/EEC of 5 September 1990 on dangerous preparations and Regulation (EC) No 1272/2008 (CLP/GHS).

- Inventory Status

On TSCA Inventory

June 2010 TSCA Inventory.

On DSL

Supplement to Canada Gazette, Part I, January 26, 1991.

On REACH

Commission Regulation (EC) No 987/2008 of 8 October 2008, amending Regulation (EC) No 1907/2006 as regards Annex IV and V.

As all substances which are in the closed list of Annex V, entry 9, benefit from the exemption of registration.

On EINECS

Annex to Official Journal of the European Communities, 15 June 1990; EINECS Corrections (English), March 1997.

On ENCS

Unlisted chemical name. For ENCS chemical class or category name, refer to ENCS No. 2-611.

On AICS

Australian Inventory of Chemical Substances, June 1996 Ed.

On ECL

Korean Existing Chemicals List, January 1997.

On SWISS

Giftliste 1 (List of Toxic Substances 1), 31 May 1999.

On PICCS

Philippines Inventory of Chemicals and Chemical Substances, 2000.

On ASIA-PAC

On NZIoC

New Zealand Inventory of Chemicals, 2006.

On IECSC 2010

Inventory of Existing Chemical Substances in China

- German Water hazard class (WGK):

ID-Number: 3161 - State of classification: Annex 3 - Classification under hazard to water: nwg



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16. OTHER INFORMATION

R-phrases: None
S-phrases: None

HMIS – Hazard Material Information System (U.S.A.)

Health: 0
Flammability: 1
Reactivity: 0
Personal Protection: E

The information provided in this Safety Data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

Material Safety Data Sheet

Section 1: Identification of the Substance / Preparation and the Supplier.

This MSDS document complies with EU commission Regulation No. 2015/830.

1.1 Product Identifier:

Product name: 5693RCE Black Masterbatch

Other means of identification:
RMB02BL

Product type: Solid, thermoplastic carbon black concentrate as pellets

1.2 Relevant identified uses of the mixture and uses advised against:

Application: Black concentrate in a polymeric carrier for use in the colouration of thermoplastic polymers.

1.3 Supplier details of the material safety data sheet:

Company: Rapid Colour Services Ltd.,
Moss Industrial Estate,
Leigh, Lancashire.
WN7 3PT. United Kingdom.

Telephone: +44 (0)1942 675932
Fax: +44 (0)1942 602229
Email: sales@rapidcolour.co.uk

Emergency Phone: +44 (0)1942 675932

Section 2: Hazards Identification.

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 [CLP]

Physical and Chemical: Not classified as a physical and chemical hazard under current legislation.



5693RCE Black Masterbatch



Human Health hazards: Not classified as a human health hazard under current legislation.
Environmental Hazards: Not classified as an environmental hazard under current legislation.
Classification according to directive 67/548/CEE or directive 1999/45/CE:
This product does not require a hazard warning label in accordance with EC directives. No particular hazards known.

2.2 Label elements:

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Product name: 5693RCE Black Masterbatch
Hazard pictograms: Not applicable
Signal word: Not applicable
Hazard statement: Not applicable
Precautionary statements: Not applicable

2.3 Other hazards: Mixture and any of its substances are not PBT or vPvB.

Physical / Chemical Hazards:

Spilled pellets present a slipping hazard on hard surfaces.
Contact with hot material can cause thermal burns which may result in permanent damage. WARNING: May form combustible dust concentrations in air (during processing/handling under certain conditions).

Health Hazards: If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapour/fumes given off may cause respiratory tract irritation.

Environmental Hazards: No significant hazards.

Section 3: Composition/Information on Ingredients.

3.1 Substances: Not applicable. This material is regulated as a mixture.

3.2 Mixture name and ingredients list:

Mixture name: 5693RCE Black Masterbatch
Ingredients list: Polyethylene
Lubricants
Carbon Black
Calcium Carbonate

No Hazardous Substance(s) required for disclosure.



5693RCE Black Masterbatch



Section 4: First Aid Measures.

4.1 Description of first aid measures:

General:	In all cases of doubt or where symptoms persist, seek medical advice. DO NOT give anything by mouth to an unconscious person. Use correct P.P.E. in all cases – gloves, respirator, clothing.
Inhalation:	Not normally required at ambient temperatures, wear respirator if necessary. Take affected persons into fresh air. Obtain medical advice if symptoms persist.
Ingestion:	DO NOT induce vomiting. In case of vomiting have the victim lean forward to guard from suffocation. If conscious drink several glasses of water. DO NOT give anything by mouth to an unconscious person.
Skin Contact:	Wear gloves or wash skin with plenty of soap and water after contact, do not use organic solvents.
Eye Contact:	Wear Goggles. If contact occurs wash eye with large volumes of water keeping eyelids open. In case of irritation, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed:

Under normal conditions of intended use, this material does not present a health hazard.

4.3 Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

Section 5: Fire Fighting Measures.

5.1 Extinguishing Media:

This material does not pose a special risk.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special Exposure Hazards arising from the mixture:

This material will support combustion if ignited. Like all thermoplastics it will melt under fire conditions. Hazardous products such as carbon monoxide and other toxic gases may be produced.

5.3 Advice for fire-fighters:

Standard procedure for chemical fires.
Wear full fire suit including self-contained breathing apparatus.



5693RCE Black Masterbatch



Further information: The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official local regulations.

Section 6: Accidental Release Measures.

6.1 Personal precautions, protective equipment and emergency procedures:

Pellets could present a slipping hazard and should be cleaned up immediately. Ensure suitable personal protection equipment is worn at all times. Brush up and transfer to a container for disposal.

6.2 Environmental precautions:

Do not allow this product to enter into sewers or surface waters and ground water.
If the product enters drains or sewers, consult local regulations for immediate contact to the local water company; in case of contamination of streams, rivers or lakes, the relevant environment agency.

6.3 Methods and material for containment and cleaning up:

Store in a closed and guarded container for disposal with the waste.
Disposal of contaminated material as waste according to item 13.

6.4 Reference to other sections:

For personal protection: see section 8

For waste regulation: see section 13

Section 7: Handling & Storage.

7.1 Handling Requirements:

This product requires no special handling other than when in bulk form.
Follow good chemical hygiene practices.
Take precautionary measures against static discharges.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the area of use of this material/Workplace.

7.2 Storage:

Store in a cool dry area where possible. Store in original packaging, closed except for times of use. Keep away from incompatible materials.

Section 8: Exposure controls & personal protection.



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General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice in accordance with local and/or national regulations/laws. The wearing of closed work clothing is recommended. Smoking, eating and drinking should be prohibited in the area of use of this material/workplace.

8.2 Personal Protection: Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Eyes:	Safety glasses with side-shields (frame goggles) (e.g. EN 166)
Skin:	Thermal insulation when handling hot material, wear gloves (EN407).
Clothing:	Appropriate closed working clothes and safety shoes/boots in keeping with local practices.
Respirators:	Exposure to high levels does not normally require the use of respirators.

8.3 Environmental Controls:

Comply with applicable environmental regulations limiting discharge to air, water and oil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

Section 9: Physical & Chemical properties.

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

Physical state:	Solid pellets
Colour:	Black
Odour:	None
Melting point:	Not tested
Flash point:	Not available
Solubility:	Insoluble in water
Auto-Ignition Temp:	Unknown. Does not ignite spontaneously

Section 10: Stability & reactivity.

10.1 Reactivity: Stable under recommended transport or storage conditions.



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10.2 Chemical stability: Stable if stored under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid:

Excessive temperatures Eg: 350°C upwards.

10.5 Incompatible materials:

Avoid contact with oxidising agent, strong acids and alkalis.

10.6 Hazardous decomposition products:

In a fire, hazardous decomposition products such as smoke, ammonia, carbon dioxide, nitrogen products, aldehydes and hydrocarbons may be given off.

Section 11: Toxicological information:

The information given is based on data available for the material in the supplied form and similar materials.

11.1 Information on toxicological effects:

Under normal conditions of intended use, this material does not present a health hazard.

Inhalation:

not applicable

Dermal:

Unlikely to cause skin irritation.

Eye:

Unlikely to cause eye irritation.

Ingestion:

Unlikely to be hazardous if swallowed.

Long Term Exposure:

These materials has been in use for many years with no evidence of adverse effects.

Section 12: Ecological Information.

12.1 Toxicity:

The product has been assessed following the conventional method in REACH source and is not classified as dangerous for the environment.

12.2 Persistence and degradability:

This product is not considered biodegradable.

12.3 Bio-accumulative potential:

No further relevant information available.

12.4 Mobility in soil:

The product is insoluble in water.

12.5 Results of PBT and vPvB assessment:

Does not contain any PBT or vPvB substances.

12.6 Other adverse effects:

Prevent contamination of Soil, Drains and surface waters.



5693RCE Black Masterbatch



Do not discharge product in an uncontrolled manner into the environment.

The material is essentially insoluble in water and can therefore be separated from aqueous medium by sedimentation and filtration processes at an effluent treatment plant.

Section 13: Disposal Considerations.

Dispose of material and/or packaging in accordance with local and or national laws and regulations and the material characteristics at the time of disposal.

13.1. Waste Treatment Methods:

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

13.2 Regulatory Disposal Information:

Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper EU waste disposal code(s).

Section 14: Transport information.

14.1 General Information:

No special transport requirements are necessary.

14.2 UN N° SEA:

Not regulated – material is classified as non-hazardous.

14.3 UN shipping name:

5693RCE Black Masterbatch

14.4 Transport hazard class:

Not regulated - material is classified as non-hazardous.

14.5 Packing group:

Not regulated - material is classified as non-hazardous.

14.6 Environmental hazards:

None - material is classified as non-hazardous.

14.7 Special precautions for user:

Not classified as dangerous for transport.

14.8 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not regulated - material is classified as non-hazardous

Section 15: Regulatory information.



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15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Not regulated the material is classified as non-hazardous.

According to CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (REACH)- according to Commission Regulation (EU) 2015/830, new Annex II.

The Manual Handling Operations Regulations.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009

European Agreement concerning the International Carriage of Dangerous Goods by Road

ADR applicable as from 1 January 2015

ECHA: guidance on the compilation of safety data sheets. Version 3.0/2015

15.2 Chemical Safety Assessment:

REACH information: A Chemical Safety Assessment has been carried out for this material and it has been classified as non-hazardous.

Section 16: Other information.

User notes:

The above information is believed to be accurate and represents the extent of our knowledge. However, no warranty either express or implied is intended by this information. The information contained in this safety sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of the use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. In general always store, handle and use in accordance with good industrial hygiene practices and in conformity with any legal regulation. Always ensure adequate ventilation of the workplace. Local exhaust ventilation of the process may be needed.

Avoid breathing vapours or fumes. Avoid processing at excess temperatures.

MSDS 16/2016/V1

Created: 05/07/2016

Printed: 05/07/2016

Author: I. Carroll



5693RCE Black Masterbatch



Material Safety Data Sheet

Section 1: Identification of the Substance / Preparation and the Supplier.

This MSDS document complies with EU commission Regulation No. 2015/830.

1.1 Product Identifier:

Product name: 5163RCN 'Caribbean' Blue colour Masterbatch

Other means of identification:

RMB01CB

Product type: Solid, thermoplastic blue concentrate as pellets

1.2 Relevant identified uses of the mixture and uses advised against:

Application: Solid blue colour concentrate in a polyamide carrier for use in the colouration of polyamide polymers.

1.3 Supplier details of the material safety data sheet:

Company: Rapid Colour Services Ltd.,
Moss Industrial Estate,
Leigh, Lancashire.
WN7 3PT. United Kingdom.

Telephone: +44 (0)1942 675932

Fax: +44 (0)1942 602229

Email: sales@rapidcolour.co.uk

Emergency Phone: +44 (0)1942 675932

Section 2: Hazards Identification.

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 [CLP]

Physical and Chemical: Not classified as a physical and chemical hazard under current legislation.



5163RCN 'Caribbean' Blue colour Masterbatch



Human Health hazards: Not classified as a human health hazard under current legislation.
Environmental Hazards: Not classified as an environmental hazard under current legislation.
Classification according to directive 67/548/CEE or directive 1999/45/CE:
This product does not require a hazard warning label in accordance with EC directives. No particular hazards known.

2.2 Label elements:

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Product name: 5163RCN 'Caribbean' Blue colour Masterbatch
Hazard pictograms: Not applicable
Signal word: Not applicable
Hazard statement: Not applicable
Precautionary statements: Not applicable

2.3 Other hazards: Mixture and any of its substances are not PBT or vPvB.

Physical / Chemical Hazards:

Spilled pellets present a slipping hazard on hard surfaces.
Contact with hot material can cause thermal burns which may result in permanent damage. WARNING: May form combustible dust concentrations in air (during processing/handling under certain conditions).

Health Hazards: If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapour/fumes given off may cause respiratory tract irritation.

Environmental Hazards: No significant hazards.

Section 3: Composition/Information on Ingredients.

3.1 Substances: Not applicable. This material is regulated as a mixture.

3.2 Mixture name and ingredients list:

Mixture name: 5163RCN 'Caribbean' Blue colour Masterbatch
Ingredients list: Polyamide 6
Lubricant
Organic and Inorganic Pigments

No Hazardous Substance(s) required for disclosure.



5163RCN 'Caribbean' Blue colour Masterbatch



Section 4: First Aid Measures.

4.1 Description of first aid measures:

General:	In all cases of doubt or where symptoms persist, seek medical advice. DO NOT give anything by mouth to an unconscious person. Use correct P.P.E. in all cases – gloves, respirator, clothing.
Inhalation:	Not normally required at ambient temperatures, wear respirator if necessary. Take affected persons into fresh air. Obtain medical advice if symptoms persist.
Ingestion:	DO NOT induce vomiting. In case of vomiting have the victim lean forward to guard from suffocation. If conscious drink several glasses of water. DO NOT give anything by mouth to an unconscious person.
Skin Contact:	Wear gloves or wash skin with plenty of soap and water after contact, do not use organic solvents.
Eye Contact:	Wear Goggles. If contact occurs wash eye with large volumes of water keeping eyelids open. In case of irritation, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed:

Under normal conditions of intended use, this material does not present a health hazard.

4.3 Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

Section 5: Fire Fighting Measures.

5.1 Extinguishing Media:

This material does not pose a special risk.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special Exposure Hazards arising from the mixture:

This material will support combustion if ignited. Like all thermoplastics it will melt under fire conditions. Hazardous products such as carbon monoxide and other toxic gases may be produced.

5.3 Advice for fire-fighters:

Standard procedure for chemical fires.
Wear full fire suit including self-contained breathing apparatus.



5163RCN 'Caribbean' Blue colour Masterbatch



Further information: The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official local regulations.

Section 6: Accidental Release Measures.

6.1 Personal precautions, protective equipment and emergency procedures:

Pellets could present a slipping hazard and should be cleaned up immediately. Ensure suitable personal protection equipment is worn at all times. Brush up and transfer to a container for disposal.

6.2 Environmental precautions:

Do not allow this product to enter into sewers or surface waters and ground water.
If the product enters drains or sewers, consult local regulations for immediate contact to the local water company; in case of contamination of streams, rivers or lakes, the relevant environment agency.

6.3 Methods and material for containment and cleaning up:

Store in a closed and guarded container for disposal with the waste.
Disposal of contaminated material as waste according to item 13.

6.4 Reference to other sections:

For personal protection: see section 8
For waste regulation: see section 13

Section 7: Handling & Storage.

7.1 Handling Requirements:

This product requires no special handling other than when in bulk form.
Follow good chemical hygiene practices.
Take precautionary measures against static discharges.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the area of use of this material/Workplace.

7.2 Storage:

Store in a cool dry area where possible. Store in original packaging, closed except for times of use. Keep away from incompatible materials.

Section 8: Exposure controls & personal protection.



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General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice in accordance with local and/or national regulations/laws. The wearing of closed work clothing is recommended. Smoking, eating and drinking should be prohibited in the area of use of this material/workplace.

8.2 Personal Protection: Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Eyes:	Safety glasses with side-shields (frame goggles) (e.g. EN 166)
Skin:	Thermal insulation when handling hot material, wear gloves (EN407).
Clothing:	Appropriate closed working clothes and safety shoes/boots in keeping with local practices.
Respirators:	Exposure to high levels does not normally require the use of respirators.

8.3 Environmental Controls:

Comply with applicable environmental regulations limiting discharge to air, water and oil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

Section 9: Physical & Chemical properties.

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

Physical state:	Solid pellets
Colour:	Solid Turquoise
Odour:	None
Melting point:	Not tested
Flash point:	Not available
Solubility:	Insoluble in water
Auto-Ignition Temp:	Unknown. Does not ignite spontaneously

Section 10: Stability & reactivity.

10.1 Reactivity: Stable under recommended transport or storage conditions.



5163RCN 'Caribbean' Blue colour Masterbatch



10.2 Chemical stability: Stable if stored under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid:

Excessive temperatures Eg: 350°C upwards.

10.5 Incompatible materials:

Avoid contact with oxidising agent, strong acids and alkalis.

10.6 Hazardous decomposition products:

In a fire, hazardous decomposition products such as smoke, ammonia, carbon dioxide, nitrogen products, aldehydes and hydrocarbons may be given off.

Section 11: Toxicological information:

The information given is based on data available for the material in the supplied form and similar materials.

11.1 Information on toxicological effects:

Under normal conditions of intended use, this material does not present a health hazard.

Inhalation:

not applicable

Dermal:

Unlikely to cause skin irritation.

Eye:

Unlikely to cause eye irritation.

Ingestion:

Unlikely to be hazardous if swallowed.

Long Term Exposure:

These materials has been in use for many years with no evidence of adverse effects.

Section 12: Ecological Information.

12.1 Toxicity:

The product has been assessed following the conventional method in REACH source and is not classified as dangerous for the environment.

12.2 Persistence and degradability:

This product is not considered biodegradable.

12.3 Bio-accumulative potential:

No further relevant information available.

12.4 Mobility in soil:

The product is insoluble in water.

12.5 Results of PBT and vPvB assessment:

Does not contain any PBT or vPvB substances.

12.6 Other adverse effects:

Prevent contamination of Soil, Drains and surface waters.



5163RCN 'Caribbean' Blue colour Masterbatch



Do not discharge product in an uncontrolled manner into the environment.

The material is essentially insoluble in water and can therefore be separated from aqueous medium by sedimentation and filtration processes at an effluent treatment plant.

Section 13: Disposal Considerations.

Dispose of material and/or packaging in accordance with local and or national laws and regulations and the material characteristics at the time of disposal.

13.1. Waste Treatment Methods:

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

13.2 Regulatory Disposal Information:

Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper EU waste disposal code(s).

Section 14: Transport information.

14.1 General Information:

No special transport requirements are necessary.

14.2 UN N° SEA:

Not regulated – material is classified as non-hazardous.

14.3 UN shipping name:

5163RCN 'Caribbean' Blue colour Masterbatch

14.4 Transport hazard class:

Not regulated - material is classified as non-hazardous.

14.5 Packing group:

Not regulated - material is classified as non-hazardous.

14.6 Environmental hazards:

None - material is classified as non-hazardous.

14.7 Special precautions for user:

Not classified as dangerous for transport.

14.8 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not regulated - material is classified as non-hazardous

Section 15: Regulatory information.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:



5163RCN 'Caribbean' Blue colour Masterbatch



Not regulated the material is classified as non-hazardous.

According to CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (REACH)- according to Commission Regulation (EU) 2015/830, new Annex II.

The Manual Handling Operations Regulations.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009

European Agreement concerning the International Carriage of Dangerous Goods by Road ADR applicable as from 1 January 2015

ECHA: guidance on the compilation of safety data sheets. Version 3.0/2015

15.2 Chemical Safety Assessment:

REACH information: A Chemical Safety Assessment has been carried out for this material and it has been classified as non-hazardous.

Section 16: Other information.

User notes:

The above information is believed to be accurate and represents the extent of our knowledge. However, no warranty either express or implied is intended by this information. The information contained in this safety sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of the use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. In general always store, handle and use in accordance with good industrial hygiene practices and in conformity with any legal regulation. Always ensure adequate ventilation of the workplace. Local exhaust ventilation of the process may be needed.

Avoid breathing vapours or fumes. Avoid processing at excess temperatures.

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Created: 28/10/2016

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Author: I. Carroll



5163RCN 'Caribbean' Blue colour Masterbatch



Material Safety Data Sheet

Section 1: Identification of the Substance / Preparation and the Supplier.

This MSDS document complies with EU commission Regulation No. 2015/830.

1.1 Product Identifier:

Product name: 3054RCN Black Masterbatch

Other means of identification:
RMB01BL

Product type: Solid, thermoplastic carbon black concentrate as pellets

1.2 Relevant identified uses of the mixture and uses advised against:

Application: Black concentrate in a polyamide carrier for use in the colouration of thermoplastic polymers.

1.3 Supplier details of the material safety data sheet:

Company: Rapid Colour Services Ltd.,
Moss Industrial Estate,
Leigh, Lancashire.
WN7 3PT. United Kingdom.

Telephone: +44 (0)1942 675932
Fax: +44 (0)1942 602229
Email: sales@rapidcolour.co.uk

Emergency Phone: +44 (0)1942 675932

Section 2: Hazards Identification.

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 [CLP]

Physical and Chemical: Not classified as a physical and chemical hazard under current legislation.



3054RCN Black Masterbatch



Human Health hazards: Not classified as a human health hazard under current legislation.
Environmental Hazards: Not classified as an environmental hazard under current legislation.
Classification according to directive 67/548/CEE or directive 1999/45/CE:
This product does not require a hazard warning label in accordance with EC directives. No particular hazards known.

2.2 Label elements:

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Product name: 3054RCN Black Masterbatch
Hazard pictograms: Not applicable
Signal word: Not applicable
Hazard statement: Not applicable
Precautionary statements: Not applicable

2.3 Other hazards: Mixture and any of its substances are not PBT or vPvB.

Physical / Chemical Hazards:

Spilled pellets present a slipping hazard on hard surfaces.
Contact with hot material can cause thermal burns which may result in permanent damage. WARNING: May form combustible dust concentrations in air (during processing/handling under certain conditions).

Health Hazards: If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapour/fumes given off may cause respiratory tract irritation.

Environmental Hazards: No significant hazards.

Section 3: Composition/Information on Ingredients.

3.1 Substances: Not applicable. This material is regulated as a mixture.

3.2 Mixture name and ingredients list:

Mixture name: 3054RCN Black Masterbatch
Ingredients list: Polyamide 6
Lubricants
Carbon Black

No Hazardous Substance(s) required for disclosure.



3054RCN Black Masterbatch



Section 4: First Aid Measures.

4.1 Description of first aid measures:

General:	In all cases of doubt or where symptoms persist, seek medical advice. DO NOT give anything by mouth to an unconscious person. Use correct P.P.E. in all cases – gloves, respirator, clothing.
Inhalation:	Not normally required at ambient temperatures, wear respirator if necessary. Take affected persons into fresh air. Obtain medical advice if symptoms persist.
Ingestion:	DO NOT induce vomiting. In case of vomiting have the victim lean forward to guard from suffocation. If conscious drink several glasses of water. DO NOT give anything by mouth to an unconscious person.
Skin Contact:	Wear gloves or wash skin with plenty of soap and water after contact, do not use organic solvents.
Eye Contact:	Wear Goggles. If contact occurs wash eye with large volumes of water keeping eyelids open. In case of irritation, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed:

Under normal conditions of intended use, this material does not present a health hazard.

4.3 Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

Section 5: Fire Fighting Measures.

5.1 Extinguishing Media:

This material does not pose a special risk.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special Exposure Hazards arising from the mixture:

This material will support combustion if ignited. Like all thermoplastics it will melt under fire conditions. Hazardous products such as carbon monoxide and other toxic gases may be produced.

5.3 Advice for fire-fighters:

Standard procedure for chemical fires.
Wear full fire suit including self-contained breathing apparatus.



3054RCN Black Masterbatch



Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official local regulations.

Section 6: Accidental Release Measures.

6.1 Personal precautions, protective equipment and emergency procedures:

Pellets could present a slipping hazard and should be cleaned up immediately. Ensure suitable personal protection equipment is worn at all times. Brush up and transfer to a container for disposal.

6.2 Environmental precautions:

Do not allow this product to enter into sewers or surface waters and ground water.
If the product enters drains or sewers, consult local regulations for immediate contact to the local water company; in case of contamination of streams, rivers or lakes, the relevant environment agency.

6.3 Methods and material for containment and cleaning up:

Store in a closed and guarded container for disposal with the waste.
Disposal of contaminated material as waste according to item 13.

6.4 Reference to other sections:

For personal protection: see section 8

For waste regulation: see section 13

Section 7: Handling & Storage.

7.1 Handling Requirements:

This product requires no special handling other than when in bulk form.
Follow good chemical hygiene practices.
Take precautionary measures against static discharges.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the area of use of this material/Workplace.

7.2 Storage:

Store in a cool dry area where possible. Store in original packaging, closed except for times of use. Keep away from incompatible materials.

Section 8: Exposure controls & personal protection.



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General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice in accordance with local and/or national regulations/laws. The wearing of closed work clothing is recommended. Smoking, eating and drinking should be prohibited in the area of use of this material/workplace.

8.2 Personal Protection: Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Eyes:	Safety glasses with side-shields (frame goggles) (e.g. EN 166)
Skin:	Thermal insulation when handling hot material, wear gloves (EN407).
Clothing:	Appropriate closed working clothes and safety shoes/boots in keeping with local practices.
Respirators:	Exposure to high levels does not normally require the use of respirators.

8.3 Environmental Controls:

Comply with applicable environmental regulations limiting discharge to air, water and oil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

Section 9: Physical & Chemical properties.

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

Physical state:	Solid pellets
Colour:	Black
Odour:	None
Melting point:	Not tested
Flash point:	Not available
Solubility:	Insoluble in water
Auto-Ignition Temp:	Unknown. Does not ignite spontaneously

Section 10: Stability & reactivity.

10.1 Reactivity: Stable under recommended transport or storage conditions.



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10.2 Chemical stability: Stable if stored under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid:

Excessive temperatures Eg: 350°C upwards.

10.5 Incompatible materials:

Avoid contact with oxidising agent, strong acids and alkalis.

10.6 Hazardous decomposition products:

In a fire, hazardous decomposition products such as smoke, ammonia, carbon dioxide, nitrogen products, aldehydes and hydrocarbons may be given off.

Section 11: Toxicological information:

The information given is based on data available for the material in the supplied form and similar materials.

11.1 Information on toxicological effects:

Under normal conditions of intended use, this material does not present a health hazard.

Inhalation:

not applicable

Dermal:

Unlikely to cause skin irritation.

Eye:

Unlikely to cause eye irritation.

Ingestion:

Unlikely to be hazardous if swallowed.

Long Term Exposure:

These materials has been in use for many years with no evidence of adverse effects.

Section 12: Ecological Information.

12.1 Toxicity:

The product has been assessed following the conventional method in REACH source and is not classified as dangerous for the environment.

12.2 Persistence and degradability:

This product is not considered biodegradable.

12.3 Bio-accumulative potential:

No further relevant information available.

12.4 Mobility in soil:

The product is insoluble in water.

12.5 Results of PBT and vPvB assessment:

Does not contain any PBT or vPvB substances.

12.6 Other adverse effects:

Prevent contamination of Soil, Drains and surface waters.



3054RCN Black Masterbatch



Do not discharge product in an uncontrolled manner into the environment.

The material is essentially insoluble in water and can therefore be separated from aqueous medium by sedimentation and filtration processes at an effluent treatment plant.

Section 13: Disposal Considerations.

Dispose of material and/or packaging in accordance with local and or national laws and regulations and the material characteristics at the time of disposal.

13.1. Waste Treatment Methods:

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

13.2 Regulatory Disposal Information:

Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper EU waste disposal code(s).

Section 14: Transport information.

14.1 General Information:

No special transport requirements are necessary.

14.2 UN N° SEA:

Not regulated – material is classified as non-hazardous.

14.3 UN shipping name:

3054RCN Black Masterbatch

14.4 Transport hazard class:

Not regulated - material is classified as non-hazardous.

14.5 Packing group:

Not regulated - material is classified as non-hazardous.

14.6 Environmental hazards:

None - material is classified as non-hazardous.

14.7 Special precautions for user:

Not classified as dangerous for transport.

14.8 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not regulated - material is classified as non-hazardous

Section 15: Regulatory information.



3054RCN Black Masterbatch



15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Not regulated the material is classified as non-hazardous.

According to CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (REACH)- according to Commission Regulation (EU) 2015/830, new Annex II.

The Manual Handling Operations Regulations.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009

European Agreement concerning the International Carriage of Dangerous Goods by Road

ADR applicable as from 1 January 2015

ECHA: guidance on the compilation of safety data sheets. Version 3.0/2015

15.2 Chemical Safety Assessment:

REACH information: A Chemical Safety Assessment has been carried out for this material and it has been classified as non-hazardous.

Section 16: Other information.

User notes:

The above information is believed to be accurate and represents the extent of our knowledge. However, no warranty either express or implied is intended by this information. The information contained in this safety sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of the use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. In general always store, handle and use in accordance with good industrial hygiene practices and in conformity with any legal regulation. Always ensure adequate ventilation of the workplace. Local exhaust ventilation of the process may be needed.

Avoid breathing vapours or fumes. Avoid processing at excess temperatures.

MSDS 16/2016/V1

Created: 05/07/2016

Printed: 05/07/2016

Author: I. Carroll



3054RCN Black Masterbatch





We create chemistry

Safety data sheet

Page: 1/10

BASF Safety data sheet according to Regulation (EC) No. 1907/2006

Date / Revised: 02.04.2012

Version: 2.0

Product: **Palamid® Black 00-6005**

(ID no. 30048495/SDS_GEN_EU/EN)

Date of print 28.10.2016

1. Identification of the substance/mixture and of the company/undertaking

Product identifier

Palamid® Black 00-6005

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: pigment preparation for the plastics industry

Details of the supplier of the safety data sheet

Company:

BASF SE
67056 Ludwigshafen
GERMANY

Telephone: +49 221 96498-528

E-mail address: Product-Safety-Masterbatch@basf.com

Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

2. Hazards Identification

Label elements

Globally Harmonized System, EU (GHS)

The product does not require a hazard warning label in accordance with GHS criteria.

According to Directive 67/548/EEC or 1999/45/EC

EEC Directives

BASF Safety data sheet according to Regulation (EC) No. 1907/2006

Date / Revised: 02.04.2012

Version: 2.0

Product: **Palamid® Black 00-6005**

(ID no. 30048495/SDS_GEN_EU/EN)

Date of print 28.10.2016

The product does not require a hazard warning label in accordance with EC Directives.

Classification of the substance or mixtureAccording to Regulation (EC) No 1272/2008 [CLP]

No need for classification according to GHS criteria for this product.

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:

No particular hazards known.

Other hazardsAccording to Regulation (EC) No 1272/2008 [CLP]

The product is under certain conditions capable of dust explosion.

3. Composition/Information on Ingredients**Mixtures**Chemical nature

Preparation based on: polyamide

Contains: pigments

4. First-Aid Measures**Description of first aid measures**

Remove contaminated clothing.

If inhaled:

After inhalation of decomposition products, remove the affected person to a source of fresh air and keep calm. Provide medical aid.

On skin contact:

Areas affected by molten material should be quickly placed under cold running water. Solidified product should not be pulled from the skin. Burns caused by molten material require hospital treatment.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:

Rinse mouth and then drink plenty of water.

BASF Safety data sheet according to Regulation (EC) No. 1907/2006

Date / Revised: 02.04.2012

Version: 2.0

Product: **Palamid® Black 00-6005**

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Date of print 28.10.2016

Most important symptoms and effects, both acute and delayed

Symptoms: No significant reaction of the human body to the product known.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures**Extinguishing media**Suitable extinguishing media:
dry powder, foamUnsuitable extinguishing media for safety reasons:
carbon dioxide**Special hazards arising from the substance or mixture**

carbon monoxide, Carbon dioxide, hydrogen cyanide; hydrocyanic acid

The substances/groups of substances mentioned can be released in case of fire. Formation of further decomposition and oxidation products depends upon the fire conditions.

Advice for fire-fightersSpecial protective equipment:
Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective clothing.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.

For large amounts: Sweep/shovel up.

Reference to other sectionsInformation regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

The product is combustible. Fine dust of the product is capable of dust explosion. The relevant fire protection measures should be noted. When the product is ground (chopped), dust explosion regulations should be noted.

Conditions for safe storage, including any incompatibilities: Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Keep container dry.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection

Control parameters

Components with workplace control parameters

Does not contain components with substance specific occupational exposure limits.

Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if dusts are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1 or FFP1)

Hand protection:

Use additional heat protection gloves when handling hot molten masses (EN 407), e.g. of textile or leather.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. In order to prevent contamination while handling, closed working clothes and working gloves should be used.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	granules
Colour:	The colour is derived from the trade name.
Odour:	faint specific odour
Odour threshold:	not determined

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Date of print 28.10.2016

pH value:	
onset of melting:	not applicable, not soluble
Boiling point:	approx. 185 °C
	not determined
Flash point:	Study does not need to be conducted.
Evaporation rate:	
	The product is a non-volatile solid.
Flammability:	does not ignite
Lower explosion limit:	
	not determined
Upper explosion limit:	
	not determined
Ignition temperature:	> 400 °C (DIN 51794)
Vapour pressure:	
	not applicable
Relative density:	
	No data available.
Relative vapour density (air):	
	The product is a non-volatile solid.
Solubility in water:	insoluble
Solubility (quantitative) :	
	insoluble
Partitioning coefficient n-octanol/water (log Kow):	
	Study does not need to be conducted.
Self ignition:	not self-igniting
Thermal decomposition:	> 300 °C
	Thermal decomposition above the indicated temperature is possible. No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	
	Study does not need to be conducted.
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating

Other information

Bulk density:	700 kg/m ³
Hygroscopy:	Non-hygroscopic
Grain size distribution:	No data available.

10. Stability and Reactivity**Reactivity**

No hazardous reactions if stored and handled as prescribed/indicated.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product may contain explosive fine dust or such dust may be produced by abrasion during transport or product transfer.

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Date of print 28.10.2016

Conditions to avoid

Avoid electro-static charge. Avoid dust formation. Avoid deposition of dust.

Incompatible materials

Substances to avoid:

No substances known that should be avoided.

Hazardous decomposition products

Possible thermal decomposition products:

carbon monoxide, hydrogen cyanide; hydrocyanic acid

11. Toxicological Information**Information on toxicological effects**Acute toxicity

Experimental/calculated data:

LD50 rat (oral): > 5,000 mg/kg

The product has not been tested. The statement has been derived from products of a similar structure or composition.

LC50 (by inhalation):

not determined

LD50 (dermal):

not determined

Irritation

Assessment of irritating effects:

No irritation is expected under intended use and appropriate handling.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

The product has not been tested. The statement has been derived from products of a similar structure or composition.

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

The product has not been tested. The statement has been derived from products of a similar structure or composition.

Respiratory/Skin sensitization

Assessment of sensitization:

No data was available concerning sensitizing properties. The chemical structure does not suggest such an effect.

Experimental/calculated data:

No data available concerning sensitizing effects.

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Germ cell mutagenicity

Assessment of mutagenicity:

No data available concerning mutagenic effects. The chemical structure does not suggest a specific alert for such an effect.

Carcinogenicity

Assessment of carcinogenicity:

No data was available concerning carcinogenic activity. The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:

No data available concerning reproduction toxicity. The chemical structure does not suggest such an effect.

Developmental toxicity

Assessment of teratogenicity:

No data was available concerning toxicity to development. The chemical structure does not suggest such an effect.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the structure of the product.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No data available concerning repeated dose toxicity.

Aspiration hazard

not applicable

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:

LC50 (96 h) > 100 mg/l, Fish

The product has not been tested. The statement has been derived from the structure of the product.

Aquatic invertebrates:

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LC50 (48 h), daphnia
not determined

Aquatic plants:
EC50 (72 h), algae
not determined

Microorganisms/Effect on activated sludge:
EC50 (0.5 h), bacteria
not determined

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No data available.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants.

Bioaccumulative potential

Assessment bioaccumulation potential:
Discharge into the environment must be avoided.

Bioaccumulation potential:
Because of the product's consistency and low water solubility, bioavailability is improbable. The product has not been tested. The statement has been derived from the structure of the product.

Mobility in soil (and other compartments if available)

Assessment transport between environmental compartments:
Study scientifically not justified.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

Additional information

Add. remarks environm. fate & pathway:
Due to the consistency of the product, dispersion into the environment is impossible. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge.

13. Disposal Considerations

Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.
Check for possible recycling.

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

14. Transport Information

Land transport

ADR

Not classified as a dangerous good under transport regulations

RID

Not classified as a dangerous good under transport regulations

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

Chemical Safety Assessment

BASF Safety data sheet according to Regulation (EC) No. 1907/2006

Date / Revised: 02.04.2012

Version: 2.0

Product: **Palamid® Black 00-6005**

(ID no. 30048495/SDS_GEN_EU/EN)

Date of print 28.10.2016

| Chemical Safety Assessment not yet performed due to registration timelines

16. Other Information

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.

SAFETY DATA SHEET



Akulon® F136-C1

Section 1. Identification

GHS product identifier : Akulon® F136-C1

Other means of identification : Not available.

Product type : Solid.

Material uses : plastic products

Supplier : DSM Engineering Plastics Europe
P.O. Box 1077
6160 BB Geleen
The Netherlands
T: +31-(0)46-7506500

DSM Japan Engineering Plastics
The Front Tower Shiba Koen, 6 - 8th Floor
2-6-3, Shiba Koen
Minato-ku, Tokyo 105-0011
Japan
T: +81-3-5404-8340

DSM Engineering Plastics Americas
2267 W. Mill Road
Evansville, IN 47720
USA
T: +1-812-435-7500

DSM Engineering Plastics India Pvt Ltd
F 40 MIDC Industrial Area
Ranjangaon
Pune 412220
India
T: +91-2138671901

DSM Engineering Plastics Asia Pacific
476 Li Bing Rd, ZhangJiang High-Tech Park
Pudong
Shanghai, 201203
P.R.China
T: +86-510-86198228

DSM South America Ltda.
Rua Doutor Ulisses Guimarães, 504
Loteamento Industrial Coral, Sertãozinho,
Mauá-SP
CEP: 09372-050
Brasil
T: +55-11-3760-6411

DSM Engineering Plastics Korea
No.1002, Michuhol Tower
#12, Gaetboel-ro, Yeonsu-gu, Incheon,
406-740, Korea
T: +82-32-260-3400

TAI-YOUNG NYLON CO., LTD.
No. 25, Ta-Yeh St., Ta-Liau Dist., Kaohsiung
City
831-62 Taiwan, R.O.C.
T: +886-7-7872251

e-mail address of person responsible for this SDS : Info.Worldwise@dsm.com

Emergency telephone number : The Netherlands: +31 (0)46 476 55 55

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 99%

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.
Hazards not otherwise classified : Heated material can cause thermal burns.

Hazardous Material
Information System (U.S.A.)

Health	0
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	E

The PPE (Personal Protection Equipment) designation in the HMIS is provided for use by employees at supplier sites only. Other users of this product are encouraged to evaluate the hazards of the product and assign PPE that is applicable to their specific situations.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Remarks : Hazard of slipping on spilled product. Heated material can cause thermal burns. Electrostatic charging can occur during unloading or processing of this material. If necessary take precautionary measures against static discharges. The likelihood of adverse health effects arising from normal use of the product is considered very low. Appropriate precautions should be taken if the product is subjected to secondary processing. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Dust may cause mechanical irritation.

Section 3. Composition/information on ingredients

Chemical description : Base polymer: Polyamide 6; CAS no. 25038-54-4
Substance/mixture : Mixture
Other means of identification : Not available.

CAS number : Not applicable.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. Any hazardous constituents are fixed in the polymer matrix and therefore present a negligible exposure risk under normal conditions of processing and handling. Additives contained in this product do not pose a risk to health unless they are liberated during processing (fumes from melting, dusts). Suitable Industrial Hygiene precautions should be implemented to prevent (respirable) dust and fume exposures. Exposure to (melting) fumes should be kept as low as possible, using suitable ventilation equipment. Dusts and fumes created from secondary processing may be irritating to respiratory tract and skin and should be considered as potentially hazardous. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Do not remove clothing adhering to skin.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Heated material can cause thermal burns resulting in pain, redness, blistering.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
(dense) black smoke
aldehydes
organic acids
nitrogen oxides (NO, NO₂ etc.)
ammonia (NH₃)
amides
Hydrogen cyanide (HCN).

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal. Take measures against static discharge. Keep away from sources of ignition.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container, protected from direct sunlight.
- Remarks** : Never stack pallets more than two high to prevent the risk of them falling over. Big Bags may not be stacked. Pallets should not be stacked along the aisles. In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Hand protection** : Wear suitable gloves. When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Pellets.]
- Color** : naturally opaque, dependent on the added pigment
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : 220 to 230 °C
- Boiling point** : Not available.
- Flash point** : Closed cup: >671°F (>355°C)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : >1 (Water = 1)
- Density (g/cm³)** : >1 g/cm³
- Bulk density** : Not available.
- Solubility** : Insoluble in the following materials: cold water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : > 420 °C
- Decomposition temperature** : >300°C (>572°F)
- Viscosity** : Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: No specific data.
Remarks	: At processing temperatures some degree of thermal degradation may occur. see section 5.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	: Not available.
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Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	: Heated material can cause thermal burns resulting in pain, redness, blistering.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Not available.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. The likelihood of adverse health effects arising from normal use of the product are considered very low.

Section 12. Ecological information**Toxicity**

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc})	: Not available.
---	------------------

Other adverse effects : No known significant effects or critical hazards.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. This product is not biodegradable and not toxic to aquatic organisms.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Remarks : In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: See remarks
United States inventory (TSCA 8b): See remarks

	Product/ingredient name	CAS #	%
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Not listed.		

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals : Not listed
(Precursor Chemicals)

DEA List II Chemicals : Not listed
(Essential Chemicals)

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

Form R - Reporting
requirements

Supplier notification

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

International lists

Canada inventory : See remarks

Remarks : Listings of substances in this section are based on the presence of these substances above the applicable concentration limit. Relevant declarations related to this product are available on request.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Code : WW33252
Date of printing : 5/13/2016
Date of issue/Date of revision : 5/13/2016
Date of previous issue : 8/19/2015
Version : 2
Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

☒ Indicates information that has changed from previously issued version.

Information : DSM Engineering Plastics BV, Global Research & Technology Department
Product Data Management
P.O. Box 1077, 6160 BB Geleen
The Netherlands, Europe
E-mail: productdatamanagement.dep@dsm.com

SDS:
DSM Expert Center BV/ Product Safety
P.O. Box 6500, 6401 JH Heerlen
The Netherlands, Europe
E-mail: info.worldwide@dsm.com

Notice to reader

The information contained in the Material Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

Remarks :

SAFETY DATA SHEET

Standard (GHS 29 1910.1200).

United States



Akulon® F136-DH

Section 1. Identification

GHS product identifier	: Akulon® F136-DH	
Other means of identification	: Not available.	
Product type	: Solid.	
Material uses	: plastic products	
Supplier	: DSM Engineering Plastics Europe P.O. Box 1077 6160 BB Geleen The Netherlands T: +31-(0)46-7506500	DSM Japan Engineering Plastics The Front Tower Shiba Koen, 6 - 8th Floor 2-6-3, Shiba Koen Minato-ku, Tokyo 105-0011 Japan T: +81-3-5404-8340
	DSM Engineering Plastics Americas 2267 W. Mill Road Evansville, IN 47720 USA T: +1-812-435-7500	DSM Engineering Plastics India Pvt Ltd F 40 MIDC Industrial Area Ranjangaon Pune 412220 India T: +91-2138671901
	DSM Engineering Plastics Asia Pacific 476 Li Bing Rd, ZhangJiang High-Tech Park Pudong Shanghai, 201203 P.R.China T: +86-510-86198228	DSM South America Ltda. Rua Doutor Ulisses Guimarães, 504 Loteamento Industrial Coral, Sertãozinho, Mauá-SP CEP: 09372-050 Brasil T: +55-11-3760-6411
	DSM Engineering Plastics Korea No.1002, Michuhol Tower #12, Gaetboel-ro, Yeonsu-gu, Incheon, 406-740, Korea T: +82-32-260-3400	TAI-YOUNG NYLON CO., LTD. No. 25, Ta-Yeh St., Ta-Liau Dist., Kaohsiung City 831-62 Taiwan, R.O.C. T: +886-7-7872251
e-mail address of person responsible for this SDS	: Info.Worldwide@dsm.com	
Emergency telephone number	: The Netherlands: +31 (0)46 476 55 55	

Section 2. Hazards identification

OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	: Not classified. Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 99%

GHS label elements

Signal word	: No signal word.
Hazard statements	: No known significant effects or critical hazards.
<u>Precautionary statements</u>	
Prevention	: Not applicable.
Response	: Not applicable.
Storage	: Not applicable.
Disposal	: Not applicable.

Section 2. Hazards identification

Hazards not otherwise classified : Heated material can cause thermal burns.

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	E

The PPE (Personal Protection Equipment) designation in the HMIS is provided for use by employees at supplier sites only. Other users of this product are encouraged to evaluate the hazards of the product and assign PPE that is applicable to their specific situations.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Remarks : Hazard of slipping on spilled product. Heated material can cause thermal burns. Electrostatic charging can occur during unloading or processing of this material. If necessary take precautionary measures against static discharges. The likelihood of adverse health effects arising from normal use of the product is considered very low. Appropriate precautions should be taken if the product is subjected to secondary processing. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Dust may cause mechanical irritation.

Section 3. Composition/information on ingredients

Chemical description : Base polymer: Polyamide 6; CAS no. 25038-54-4

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number : Not applicable.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. Any hazardous constituents are fixed in the polymer matrix and therefore present a negligible exposure risk under normal conditions of processing and handling. Additives contained in this product do not pose a risk to health unless they are liberated during processing (fumes from melting, dusts). Suitable Industrial Hygiene precautions should be implemented to prevent (respirable) dust and fume exposures. Exposure to (melting) fumes should be kept as low as possible, using suitable ventilation equipment. Dusts and fumes created from secondary processing may be irritating to respiratory tract and skin and should be considered as potentially hazardous. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Do not remove clothing adhering to skin.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact : No known significant effects or critical hazards.
- Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact : Heated material can cause thermal burns resulting in pain, redness, blistering.
- Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact : No specific data.
- Inhalation : No specific data.
- Skin contact : No specific data.
- Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical : No specific fire or explosion hazard.

- Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
(dense) black smoke
aldehydes
organic acids
nitrogen oxides (NO, NO₂ etc.)
ammonia (NH₃)
amides
Hydrogen cyanide (HCN).

- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal. Take measures against static discharge. Keep away from sources of ignition.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container, protected from direct sunlight.
- Remarks** : Never stack pallets more than two high to prevent the risk of them falling over. Big Bags may not be stacked. Pallets should not be stacked along the aisles. In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Hand protection** : Wear suitable gloves. When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Pellets.]
- Color** : naturally opaque, dependent on the added pigment
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : 220 to 230 °C
- Boiling point** : Not available.
- Flash point** : Closed cup: >671°F (>355°C)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : >1 (Water = 1)
- Density (g/cm³)** : >1 g/cm³
- Bulk density** : Not available.
- Solubility** : Insoluble in the following materials: cold water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : > 420 °C
- Decomposition temperature** : >300°C (>572°F)
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : No specific data.
- Remarks** : At processing temperatures some degree of thermal degradation may occur. see section 5.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Section 11. Toxicological information

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	: Heated material can cause thermal burns resulting in pain, redness, blistering.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 11. Toxicological information

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. The likelihood of adverse health effects arising from normal use of the product are considered very low.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. This product is not biodegradable and not toxic to aquatic organisms.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Remarks : In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** See remarks
United States inventory (TSCA 8b): See remarks

	Product/ingredient name	CAS #	%
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Not listed.		

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 15. Regulatory information

International lists

Canada inventory : See remarks

Remarks : Listings of substances in this section are based on the presence of these substances above the applicable concentration limit. Relevant declarations related to this product are available on request.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Code : WW33269

Date of printing : 12/10/2015

Date of issue/Date of revision : 12/10/2015

Date of previous issue : 5/22/2015

Version : 2

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

☒ Indicates information that has changed from previously issued version.

Information : DSM Engineering Plastics BV, Global Research & Technology Department
Product Data Management
P.O. Box 1077, 6160 BB Geleen
The Netherlands, Europe
E-mail: productdatamanagement.dep@dsm.com

SDS:
DSM Expert Center BV/ Product Safety
P.O. Box 6500, 6401 JH Heerlen
The Netherlands, Europe
E-mail: info.worldwide@dsm.com

Notice to reader

Section 16. Other information

The information contained in the Material Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

Remarks

SAFETY DATA SHEET



Akulon® K225-KS

Section 1. Identification

GHS product identifier : Akulon® K225-KS

Other means of identification : Not available.

Product type : Solid.

Material uses : plastic products

Supplier : DSM Engineering Plastics Europe
P.O. Box 1077
6160 BB Geleen
The Netherlands
T: +31-(0)46-7506500

DSM Japan Engineering Plastics
The Front Tower Shiba Koen, 6 - 8th Floor
2-6-3, Shiba Koen
Minato-ku, Tokyo 105-0011
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DSM Engineering Plastics Americas
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Shanghai, 201203
P.R.China
T: +86-510-86198228

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Rua Doutor Ulisses Guimarães, 504
Loteamento Industrial Coral, Sertãozinho,
Mauá-SP
CEP: 09372-050
Brasil
T: +55-11-3760-6411

DSM Engineering Plastics Korea
No.1002, Michuhol Tower
#12, Gaetboel-ro, Yeonsu-gu, Incheon,
406-740, Korea
T: +82-32-260-3400

TAI-YOUNG NYLON CO., LTD.
No. 25, Ta-Yeh St., Ta-Liau Dist., Kaohsiung
City
831-62 Taiwan, R.O.C.
T: +886-7-7872251

e-mail address of person responsible for this SDS : Info.Worldwise@dsm.com

Emergency telephone number : The Netherlands: +31 (0)46 476 55 55

Section 2. Hazards identification

Classification of the substance or mixture : This product does not present a danger to human health or the aquatic environment in the form in which it is placed on the market. Therefore, based on section 1.3.4 of Annex I of the EU CLP regulation 1272/2008, this product does not require labelling, although it is classified as dangerous.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 99%

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : Heated material can cause thermal burns.

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	E

The PPE (Personal Protection Equipment) designation in the HMIS is provided for use by employees at supplier sites only. Other users of this product are encouraged to evaluate the hazards of the product and assign PPE that is applicable to their specific situations.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Remarks : Hazard of slipping on spilled product. Heated material can cause thermal burns. Electrostatic charging can occur during unloading or processing of this material. If necessary take precautionary measures against static discharges. The likelihood of adverse health effects arising from normal use of the product is considered very low. Appropriate precautions should be taken if the product is subjected to secondary processing. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Dust may cause mechanical irritation.

Section 3. Composition/information on ingredients

Chemical description : Base polymer: Polyamide 6; CAS no. 25038-54-4.
If the color of the product is black, the product may contain up to 0.9% carbon black.

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number : Not applicable.

Ingredient name	%	CAS number
Melamine cyanurate	0 - 50	37640-57-6
Carbon black (ONLY for black-colored products)	0.1 - 0.9	1333-86-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. Any hazardous constituents are fixed in the polymer matrix and therefore present a negligible exposure risk under normal conditions of processing and handling. Additives contained in this product do not pose a risk to health unless they are liberated during processing (fumes from melting, dusts). Suitable Industrial Hygiene precautions should be implemented to prevent (respirable) dust and fume exposures. Exposure to (melting) fumes should be kept as low as possible, using suitable ventilation equipment. Dusts and fumes created from secondary processing may be irritating to respiratory tract and skin and should be considered as potentially hazardous. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Do not remove clothing adhering to skin.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Heated material can cause thermal burns resulting in pain, redness, blistering.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
(dense) black smoke
aldehydes
organic acids
nitrogen oxides (NO, NO₂ etc.)
ammonia (NH₃)
amides
Hydrogen cyanide (HCN).

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal. Take measures against static discharge. Keep away from sources of ignition.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container, protected from direct sunlight.
- Remarks** : Never stack pallets more than two high to prevent the risk of them falling over. Big Bags may not be stacked. Pallets should not be stacked along the aisles. In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1,3,5-triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1) Carbon black (ONLY for black-colored products)	None. OSHA PEL 1989 (United States, 3/1989). TWA: 3.5 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 3.5 mg/m ³ 10 hours. TWA: 0.1 mg of PAHs/cm ³ 10 hours. OSHA PEL (United States, 2/2013). TWA: 3.5 mg/m ³ 8 hours. ACGIH TLV (United States, 3/2015). TWA: 3 mg/m ³ 8 hours. Form: Inhalable fraction

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eyel/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Hand protection** : Wear suitable gloves. When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Remarks** : If the color of the product is black, the product may contain up to 0.9% carbon black.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Pellets.]
- Color** : naturally opaque, dependent on the added pigment
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : 220 to 230 °C
- Boiling point** : Not available.
- Flash point** : Closed cup: >671°F (>355°C)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.

Lower and upper explosive (flammable) limits : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : >1 (Water = 1)
Density (g/cm³) : >1 g/cm³
Bulk density : Not available.
Solubility : Insoluble in the following materials: cold water.
Solubility in water : Not available.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : > 420 °C
Decomposition temperature : >300°C (>572°F)
Viscosity : Not available.
Remarks : If the color of the product is black, the product may contain up to 0.9% carbon black.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.
Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid : No specific data.
Incompatible materials : No specific data.
Hazardous decomposition products : No specific data.
Remarks : At processing temperatures some degree of thermal degradation may occur. see section 5.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Melamine cyanurate	LD50 Dermal	Rat	5520 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-
Carbon black (ONLY for black-colored products)				

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Product/ingredient name	OSHA	IARC	NTP
Carbon black (ONLY for black-colored products)	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Melamine cyanurate	Category 2	Oral	Not determined

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
 Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
 Skin contact : Heated material can cause thermal burns resulting in pain, redness, blistering.
 Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
 Inhalation : No specific data.
 Skin contact : No specific data.
 Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : Not available.
 Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
 Potential delayed effects : Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.
 Carcinogenicity : No known significant effects or critical hazards.
 Mutagenicity : No known significant effects or critical hazards.
 Teratogenicity : No known significant effects or critical hazards.
 Developmental effects : No known significant effects or critical hazards.
 Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Not available.

- Remarks : If the color of the product is black, the product may contain up to 0.9% carbon black.
- Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. The likelihood of adverse health effects arising from normal use of the product are considered very low.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Melamine cyanurate	Acute EC50 >100 mg/l Acute LC50 >10000 mg/l	Daphnia Fish	48 hours 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Melamine cyanurate	-2.28	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Remarks : The components of this product are embedded in an impervious polymer matrix and are therefore not biologically available. This product is not biodegradable and not toxic to aquatic organisms.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-



Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Remarks : In case the material is delivered in bulk silo, the silo can contain 0.5 bar dry air at maximum. Relief pressure via vent line. Never use the manlid for pressure relief.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** See remarks
United States inventory (TSCA 8b): See remarks

	Product/ingredient name	CAS #	%
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Not listed.		

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

Form R - Reporting requirements

Supplier notification

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: CARBON BLACK

Pennsylvania : The following components are listed: CARBON BLACK

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Carbon black (ONLY for black-colored products)	Yes.	No.	No.	No.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

International lists

Canada inventory : See remarks

Remarks : If the color of the product is black, the product may contain up to 0.9% carbon black.

Remarks : Listings of substances in this section are based on the presence of these substances above the applicable concentration limit. Relevant declarations related to this product are available on request.

Section 16. Other information**National Fire Protection Association (U.S.A.)**

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Code : WW35601

Date of printing : 10/25/2016

Date of issue/Date of revision : 10/25/2016

Date of previous issue : 8/29/2016

Version : 2.1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as

modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

✓ Indicates information that has changed from previously issued version.

Information : DSM Engineering Plastics BV, Global Research & Technology Department
Product Data Management
P.O. Box 1077, 6160 BB Geleen
The Netherlands, Europe
E-mail: productdatamanagement.dep@dsm.com

SDS:
DSM Expert Center BV/ Product Safety
P.O. Box 6500, 6401 JH Heerlen
The Netherlands, Europe
E-mail: info.worldwise@dsm.com

Notice to reader

The information contained in the Material Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

Remarks :

Remarks : This product does not present a danger to human health or the aquatic environment in the form in which it is placed on the market. Therefore, based on section 1.3.4 of Annex I of the EU CLP regulation 1272/2008, this product does not require labelling, although it is classified as dangerous.

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 17.06.2015

Version number 5

Revision: 28.01.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **GRILON MB XE 3643 NATURAL**

Article number: 125571

1.2 Relevant identified uses of the substance or mixture and uses advised against

Sector of Use SU12 Manufacture of plastics products, including compounding and conversion

Product category PC32 Polymer preparations and compounds

Application of the substance / the mixture

Polymeric material in granular form for thermoplastic processing

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

EMS-CHEMIE AG CH-7013 Domat/Ems

Tel.: +41 81 632 78 88 Fax: +41 81 632 76 65

E-Mail: welcome@emsgrivory.com

Informing department:

Abteilung Umweltschutz und Sicherheit

Tel.: +41 81 632 78 88 Fax: +41 81 632 76 65

E-Mail: produktsicherheit@emsservices.ch

1.4 Emergency telephone number:

EMS-CHEMIE AG CH-7013 Domat/Ems

Phone: +41 81 632 78 88 Fax: +41 81 632 76 65

Poison Centre Switzerland Zürich Phone: +41 44 251 51 51

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS08 health hazard

STOT RE 1 H372 Causes damage to the thyroid through prolonged or repeated exposure.
Route of exposure: Oral.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified according to the CLP regulation.

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GB

Safety data sheet

according to Regulation (EC) No. 1907/2006

Printing date 17.06.2015

Version number 5

Revision: 28.01.2015

Trade name: GRILON MB XE 3643 NATURAL

Hazard pictograms

(Contd. of page 1)



GHS07 GHS08 GHS09

Signal word Danger

Hazard-determining components of labelling:

potassium iodide
copper iodide

Hazard statements

H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H372 Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure:
Oral.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

Description:

Polyamide
Additives / Modifiers

Dangerous components:

CAS: 7681-11-0	potassium iodide	10-<25%
EINECS: 231-659-4	STOT RE 1, H372	
CAS: 7681-65-4	copper iodide	1-<3%
EINECS: 231-674-6	STOT RE 1, H372; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Irrit. 2, H315; Skin Sens. 1A, H317	

Additional information For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information No special measures required.
After inhalation Supply fresh air; consult doctor in case of symptoms.

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GB

Safety data sheet

according to Regulation (EC) No. 1907/2006

Printing date 17.06.2015

Version number 5

Revision: 28.01.2015

Trade name: GRILON MB XE 3643 NATURAL

(Contd. of page 2)

. After skin contact

Immediately wash with water and soap and rinse thoroughly.
 With prolonged skin irritation, consult a doctor.
 After contact with the molten product, cool rapidly with cold water.
 Do not pull solidified product away from the skin.
 Seek medical treatment.

. After eye contact

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

. After swallowing In case of persistent symptoms consult doctor.**. 4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

. 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

. 5.1 Extinguishing media**. Suitable extinguishing agents**

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

. 5.2 Special hazards arising from the substance or mixture

Can be released in case of fire:

Carbon monoxide (CO)

Carbon dioxide (CO₂)

Nitrogen oxides (NO_x)

Hydrogen cyanide (HCN)

Under certain fire conditions, traces of other toxic gases cannot be excluded.

. 5.3 Advice for firefighters

. Protective equipment: Use self-contained breathing apparatus and protective fire fighting clothing.

. Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

. 6.1 Personal precautions, protective equipment and emergency procedures

Particular danger of slipping on leaked/spilled product.

. 6.2 Environmental precautions: No special measures required.**. 6.3 Methods and material for containment and cleaning up:** Collect mechanically.**. 6.4 Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage

. 7.1 Precautions for safe handling

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Extractors are required on all machines used for thermal processing.

Prevent formation of dust.

Any deposit of dust which cannot be avoided must be removed regularly.

. Information about protection against explosions and fires: Protect against electrostatic charges.

(Contd. on page 4)

Safety data sheet

according to Regulation (EC) No. 1907/2006

Printing date 17.06.2015

Version number 5

Revision: 28.01.2015

Trade name: GRILON MB XE 3643 NATURAL

(Contd. of page 3)

- . 7.2 Conditions for safe storage, including any incompatibilities
- . Storage
- . Requirements to be met by storerooms and containers: No special requirements.
- . Information about storage in one common storage facility: Not required.
- . Further information about storage conditions: Protect from humidity and keep away from water.
- . Storage class 10-13
- . 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- . Additional information about design of technical systems: No further data; see item 7.
- . 8.1 Control parameters
- . Components with critical values that require monitoring at the workplace:
National workplace exposure limits for airborne particles (respirable and inhalable dust) have to be observed.

. DNELs

7681-11-0 potassium iodide

Oral	DNEL - long-term systemic effects	0.01 mg/kg bw/day (general population)
Dermal	DNEL - acute local effects	0.01 mg/kg bw/day (general population)
	DNEL - long-term systemic effects	1 mg/kg bw/day (general population)
		1 mg/kg bw/day (worker)
Inhalative	DNEL - long-term systemic effects	0.035 mg/m ³ (general population)
		0.07 mg/m ³ (worker)

. PNECs

7681-11-0 potassium iodide

PNEC	0.0075 mg/kg dry weight (fresh water sediment)
	0.075 mg/l (water (intermittent releases))
	0.0075 mg/l (fresh water)

- . 8.2 Exposure controls
- . Personal protective equipment
- . General protective and hygienic measures
 - Wash hands during breaks and at the end of the work.
 - Avoid skin contact with the liquefied material.
 - Do not inhale dust / smoke / mist.
 - Avoid close or long term contact with the skin.
- . Breathing equipment: Not necessary if room is well-ventilated.
- . Protection of hands: Protective gloves.
- . Eye protection: Safety glasses
- . Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

. 9.1 Information on basic physical and chemical properties

. General Information

. Appearance:

Form:	Granulate
Colour:	According to product specification
Smell:	Nearly odourless

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- | | |
|---|--|
| . Change in condition
Melting point/Melting range: 210-230 °C | |
| . Flash point: | Not applicable |
| . Decomposition temperature: | > 350 °C |
| . Self-inflammability: | Product is not selfigniting. |
| . Danger of explosion: | Product is not explosive. |
| . Density at 20 °C | > 1.0 g/cm³ |
| . Solubility in / Miscibility with
Water: Insoluble | |
| . 9.2 Other information | No further relevant information available. |

SECTION 10: Stability and reactivity

- . **10.1 Reactivity** Reacts with strong acids and oxidizing agents
- . **10.2 Chemical stability** No decomposition if used and stored according to specifications.
- . **10.3 Possibility of hazardous reactions**
The product is not capable of dust explosion in the form supplied; enrichment with fine dust causes risk of dust explosion
- . **10.4 Conditions to avoid** No further relevant information available.
- . **10.5 Incompatible materials:**
Strong acids.
Strong oxidizing agents.
- . **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

- . **11.1 Information on toxicological effects**
- . **Acute toxicity**
- . **LD/LC50 values that are relevant for classification:**

7681-11-0 potassium iodide		
Oral	LD50	2484 mg/kg (rat)
7681-65-4 copper iodide		
Oral	LD50	1449 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rabbit)

- . **Primary irritant effect:**
- . **Skin corrosion/irritation** No irritant effect.
- . **Serious eye damage/irritation** No irritant effect.
- . **Respiratory or skin sensitisation** Sensitization possible by skin contact.
- . **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
Irritant
- . **Acute effects (acute toxicity, irritation and corrosivity)** No further relevant information available.
- . **Sensitisation** Sensitization possible by skin contact.
- . **Repeated dose toxicity** No further relevant information available.

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CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
No further relevant information available.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

7681-11-0 potassium iodide

EC50 / 48 h	10.6 mg/l (daphnia magna)
LC50 / 96 h	1540 mg/l (fish)
	3780 mg/l (fish (oncorhynchus mykiss))

7681-65-4 copper iodide

EC50 / 48 h	0.59 mg/l (daphnia magna)
EC50 / 72 h (static)	0.13 mg/l (algae (desmodesmus subspicatus)) (OECD 201)
LC50	7570 mg/l (activated sludge)
LC50 / 96 h	0.4 mg/l (fish (brachydanio rerio))
	1.67 mg/l (fish (oncorhynchus mykiss))

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Harmful to fish

Additional ecological information:

General notes:

Water hazard class 2 (): hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system.

Danger to drinking water if even small quantities leak into soil.

Harmful to aquatic organisms

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation Disposal according to local statutory requirements.

European waste catalogue

07 02 13	waste plastic
12 01 05	plastics shavings and turnings

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, ADN, IMDG, IATA

Void

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. 14.2 UN proper shipping name . ADR, ADN, IMDG, IATA	Void
. 14.3 Transport hazard class(es) . ADR, ADN, IMDG, IATA . Class	Void
. 14.4 Packing group . ADR, IMDG, IATA	Void
. 14.5 Environmental hazards: . Marine pollutant:	Yes
. 14.6 Special precautions for user	Not applicable.
. 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
. Transport/Additional information:	Not dangerous according to ADR/RID/IMDG/IATA because of insufficient biological availability (Eluent test DIN 38 414-4).
. UN "Model Regulation":	-

SECTION 15: Regulatory information

. 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No further relevant information available.

. 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

The information contained herein is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

. Relevant phrases

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H372 Causes damage to the thyroid through prolonged or repeated exposure. Route of exposure: Oral.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

. Department issuing data specification sheet: Environment and Safety Department (U+S)

. Contact:

Abteilung Umweltschutz und Sicherheit

Tel.: +41 81 632 78 88 Fax: +41 81 632 76 65

E-Mail: produktsicherheit@emsservices.ch

. Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
 Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
 Skin Sens. 1A: Sensitisation - Skin, Hazard Category 1A
 STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
 Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
 Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
 Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

Sources**Regulations**

Directive 1999/45/EC, amended last by regulation (EC) No 1907/2006.

Directive 67/548/EEC, amended last by commission directive 2009/2/EG.

Regulation (EC) No 1907/2006, amended by (EU) Nr. 453/2010, amended last by commission regulation (EU) No 1272/2013.

Regulation (EC) No 1272/2008, amended last by commission regulation (EU) No 944/2013.

*** Data compared to the previous version altered.**

GB

Trade name: ALCOLOR PA A GY3003-14 grey

Product no.: 1003995500000

Current version : 1.0.0, issued: 04.08.2015

Replaced version: -, issued: -

Region: GB

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name

ALCOLOR PA A GY3003-14 grey

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Manufacture of plastic products

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet

Address

ALBIS PLASTIC GMBH

Mühlenhagen 35

20539 Hamburg

Telephone no. +49 (0) 40 78 10 50

Fax no. +49 (0) 40 78 10 53 61

Information provided by / telephone

+49 (0)40 78 105-105

Advice on Safety Data Sheet

msds.products@albis.com

1.4 Emergency telephone number

For medical advice (in German and English):

+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification information

This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP).

2.2 Label elements

Not relevant

2.3 Other hazards

PBT assessment

The components of this product are not considered to be a PBT.

vPvB assessment

The components of this product are not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable. The product is not a substance.

3.2 Mixtures

Chemical characterization

plastic compound based on polyamide (PA)

Hazardous ingredients

This product does not contain substances to be mentioned according to EU Regulation No 1907/2006 (REACH), annex II.

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Product no.: 1003995500000

Current version : 1.0.0, issued: 04.08.2015

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Region: GB

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove contaminated clothing and shoes and launder thoroughly before reusing.

After inhalation

In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. Ensure supply of fresh air.

After skin contact

When in contact with the skin, clean with soap and water. After contact with molten product, cool skin area rapidly with cold water. Do not use force or solvents to remove material from affected skin areas. Burns caused by molten material must be treated clinically.

After eye contact

Remove contact lenses. Rinse the affected eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes).

After ingestion

Rinse mouth thoroughly with water. Get medical attention if pain still persists.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguishing powder; Carbon dioxide; Water spray jet; Foam

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO); Hydrogen cyanide (HCN)

5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Avoid dust formation.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically. When picked up, treat material as prescribed under heading "Disposal considerations". Risk of slipping due to leakage/spillage of product.

6.4 Reference to other sections

No data available.

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SECTION 7: Handling and storage**7.1 Precautions for safe handling****Advice on safe handling**

Provide for sufficient ventilation at the workplace / fume extraction at source / processing machine (in particular next to the vented hopper, injection nozzle and melt). Avoid dust formation during mechanical processing re-granulation of plastic material / capture dust at the source. If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Avoid product contact with skin, eyes and clothing; Do not inhale vapours or dust. Provide eye wash fountain in work area.

Advice on protection against fire and explosion

Keep away from sources of heat and ignition. Avoid formation of dust. Take precautionary measures against static charges.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Comply with legal health and safety regulations; Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight. Protect against wetness.

Requirements for storage rooms and vessels

Close tightly opened containers and store them upright to prevent any leakage.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	Dust		
	List of approved workplace exposure limits (WELs) / EH40		
	total inhalable dust		
	TWA	10	mg/m ³
	List of approved workplace exposure limits (WELs) / EH40		
	respirable dust		
	TWA	4	mg/m ³

Other information

When dusts are generated during mechanical processing (e.g. grinding, re-granulation of plastic material), regulations / workplace exposure limits must be adhered to.

8.2 Exposure controls**Appropriate engineering controls**

Provide sufficient ventilation / extraction to maintain a workplace environment which ensures compliance with the occupational exposure limits set (see Section 8.1)

Personal protective equipment**Respiratory protection**

In case of insufficient ventilation or levels are likely to exceed workplace exposure limits , wear suitable respiratory equipment. In case of dust formation: P2 respirators (EN 143)

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

When handling hot melts, use suitable heat resistant gloves (EN 407).

Other

Common chemical protective clothing (cotton), safety footwear; Selection / adaptation of protection measures according to operational / workplace related conditions.

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Product no.: 1003995500000

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Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Form/Colour		
solid (granulate)		
colourless or depending on colouration		
Odour		
characteristic		
Odour threshold		
No data available		
pH value		
Not applicable		
Boiling point / boiling range		
No data available		
Melting point / melting range		
Value	220	°C
Decomposition point / decomposition range		
Value	320	°C
Flash point		
Not applicable		
Auto-ignition temperature		
Not applicable		
Oxidising properties		
Not applicable		
Explosive properties		
Not applicable		
Flammability (solid, gas)		
Not applicable		
Lower flammability or explosive limits		
No data available		
Upper flammability or explosive limits		
No data available		
Vapour pressure		
Not applicable		
Vapour density		
Not applicable		
Evaporation rate		
Not applicable		
Relative density		
No data available		
Density		
Remarks	see technical data sheet	
Solubility in water		
Remarks	insoluble	

Trade name: ALCOLOR PA A GY3003-14 grey**Product no.:** 1003995500000**Current version :** 1.0.0, issued: 04.08.2015**Replaced version:** -, issued: -**Region:** GB**Solubility(ies)**

No data available

Partition coefficient: n-octanol/water

No data available

Viscosity

Not applicable

9.2 Other information**Other information**

No data available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

This material is considered to be non-reactive under normal use conditions.

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature. Thermal decomposition: see section 9 "Decomposition point / decomposition range"

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

Temperatures above decomposition temperature (see section 9)

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition productsIn case of fire: see section 5. Thermal decomposition may yield residual monomers (see Section 8.1) and other substances: Ammonia (NH₃); epsilon-caprolactam; Nitriles; Hydrogen cyanide (HCN)

Trade name: ALCOLOR PA A GY3003-14 grey

Product no.: 1003995500000

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SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute oral toxicity**

No data available

Acute dermal toxicity

No data available

Acute inhalational toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Reproduction toxicity

No data available

Carcinogenicity

No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Aspiration hazard

Not relevant

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact may cause mechanical irritation through dust particles.

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SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish (acute)
No data available
Toxicity to fish (chronic)
No data available
Toxicity to Daphnia (acute)
No data available
Toxicity to Daphnia (chronic)
No data available
Toxicity to algae (acute)
No data available
Toxicity to algae (chronic)
No data available
Bacteria toxicity
No data available

12.2 Persistence and degradability

Biodegradability	
No	Product Name
1	ALCOLOR PA A GY3003-14 grey
Evaluation	The product is not biodegradable.
Physico-chemical eliminability	
No	Product Name
1	ALCOLOR PA A GY3003-14 grey
Remarks	The product is insoluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)	
No	Product Name
1	ALCOLOR PA A GY3003-14 grey
Remarks	Not bioaccumulative.

12.4 Mobility in soil

Mobility in soil	
No	Product Name
1	ALCOLOR PA A GY3003-14 grey
Remarks	The product is not mobile in the environment due to its non-solubility in water.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Other adverse effects

No data available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste code 070213 Plastic waste

The listed waste code numbers, according to the European Waste Catalogue, are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company. Dispose of according to all applicable regulations upon consultation of the local competent authorities and the disposer in a suitable and authorised disposal facility. Product fit for reuse. Check for reusability

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

Trade name: ALCOLOR PA A GY3003-14 grey

Product no.: 1003995500000

Current version : 1.0.0, issued: 04.08.2015

Replaced version: -, issued: -

Region: GB

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I.

National regulations**Other national regulations**

Adhere to national regulations for proper handling and use of hazardous materials. Use appropriate personal protective equipment.

15.2 Chemical safety assessment

For this mixture a chemical safety assessment has not been carried out.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Department issuing safety data sheet

UMCO Umwelt Consult GmbH

Georg-Wilhelm-Str. 183, D-21107 Hamburg

Tel.: +49 40 / 79 02 36 300 Fax: +49 40 / 79 02 36 357 e-mail: umco@umco.de

This information is based on our present state of knowledge and experience.

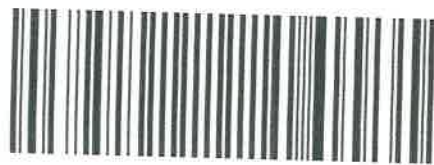
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