

Safety Data Sheet dated 22/1/2018, version 1

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

1.1. Product identifier

Mixture identification:

Trade name: DUNAPOX BLACK AD 135 RESIN

Trade code: 260275

Product type:

Epoxy resin

1.2. Relevant identified uses of the substance or mixture and uses advised against
Component for the production of epoxy polymers

1.3. Details of the supplier of the safety data sheet

Company:

DUNA-Corradini S.p.A.

Via Modena-Carpi, 388

41019 Soliera (MO)

Italy

Competent person responsible for the safety data sheet:

safety@dunagroup.com

1.4. Emergency telephone number


DUNA-Corradini S.p.A.

phone +39 059 893911


SECTION 2: Hazards identification


2.1. Classification of the substance or mixture


EC regulation criteria 1272/2008 (CLP):

 Warning, Skin Irrit. 2, Causes skin irritation.

 Warning, Eye Irrit. 2, Causes serious eye irritation.

 Warning, Skin Sens. 1, May cause an allergic skin reaction.

 Warning, Muta. 2, Suspected of causing genetic defects.

 Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P273 Avoid release to the environment.

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

P308+P313 IF exposed or concerned: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

Special Provisions:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

Contains

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)

2,3-epoxypropyl o-tolyl ether

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
$\geq 20\%$ - $< 30\%$	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	CAS: 25068-38-6 EC: 500-033-5 REACH No.: 01-21194566 19-26-xxxx	3.3/2 Eye Irrit. 2 H319 4.1/C2 Aquatic Chronic 2 H411 3.2/2 Skin Irrit. 2 H315 3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317
$\geq 5\%$ - $< 10\%$	2,3-epoxypropyl o-tolyl ether	Index number: 603-056-00-X CAS: 2210-79-9 EC: 218-645-3 REACH No.: 01-21199669 07-18-xxxx	3.5/2 Muta. 2 H341 3.2/2 Skin Irrit. 2 H315 3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317 4.1/C2 Aquatic Chronic 2 H411
$\geq 0.1\%$ - $< 1\%$	Low boiling point naphtha - unspecified	CAS: 64742-95-6 EC: 265-199-0 REACH No.: 01-21194558 51-35-xxxx	2.6/3 Flam. Liq. 3 H226 3.10/1 Asp. Tox. 1 H304 3.8/3 STOT SE 3 H335 3.8/3 STOT SE 3 H336 4.1/C2 Aquatic Chronic 2 H411
$< 0.1\%$	2-methoxy-1-methylethyl acetate	Index number: 607-195-00-7 CAS: 108-65-6 EC: 203-603-9	2.6/3 Flam. Liq. 3 H226

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having
- come into contact with the product must be rinsed immediately with plenty of running water
and possibly with soap.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of
time, then consult an ophthalmologist immediately.
Protect uninjured eye.

In case of ingestion:

Seek a medical examination immediately and present this safety-data sheet.
Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION
IMMEDIATELY.

In case of inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use
or safety data sheet if possible).

Treatment:

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into
drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible
authorities.

Suitable material for taking up: absorbing material, organic, sand.

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13.

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
Avoid contact with skin and eyes and inhalation of vapors and mists.
Keep container tightly closed and always ensure adequate ventilation in environments in which the manipulation is done.
Before transfer operations, make sure that there are no incompatible residual materials in the receiving container.
Contaminated clothing should be changed before entering eating areas.
At work do not eat, do not drink and do not smoke.
- 7.2. Conditions for safe storage, including any incompatibilities
Keep away from sources of heat, flames and sparks.
Incompatible materials: see section 10.
Indications for the premises: fresh and adequately ventilated.
For the recommended storage temperatures please refer to the values reported in the Technical Data Sheets.
Store in well-ventilated areas.
Store in tightly closed original container in a cool, dry place.
Protect from freezing and direct sunlight.
Do not store near drains.
- 7.3. Specific end use(s)
See the technical data sheet of this product for more information.

SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters
Low boiling point naphtha - unspecified - CAS: 64742-95-6
TLV TWA - 20 mg/m³
TLV STEL - 100 mg/m³
2-methoxy-1-methylethyl acetate - CAS: 108-65-6
EU - TWA(8h): 275 mg/m³, 50 ppm - STEL: 550 mg/m³, 100 ppm - Notes: Skin
TLV TWA - 275 mg/m³ - 50 ppm
TLV STEL - 550 mg/m³ - 100 ppm
- DNEL Exposure Limit Values
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6
Worker Industry: 12.25 ppm - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
Worker Industry: 12.25 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Industry: 8.33 mg/kg - Consumer: 3.571 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects
Worker Industry: 8.33 mg/kg - Consumer: 3.571 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 0.75 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects
Consumer: 0.75 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
- PNEC Exposure Limit Values
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6
Target: Fresh Water - Value: 0.006 mg/l
Target: Marine water - Value: 0.0006 mg/l
Target: Intermittent release - Value: 0.018 mg/l
Target: Freshwater sediments - Value: 0.996 mg/kg
Target: Marine water sediments - Value: 0.0996 mg/kg
Target: Soil - Value: 0.196 mg/kg
- 8.2. Exposure controls
Eye protection:

Use safety glasses complying with an approved standard, to avoid exposure to liquid splashes, mists or dusts.

Protection for skin:

PPE for the body should be selected based on the risks of the job.

We recommend the use of heavy cotton clothing or disposable Tyvek.

Protection for hands:

Wear resistant gloves when in contact with chemicals, in accordance with EN 374.

Among the examples of the materials for gloves that can offer appropriate protection are: butyl rubber, chlorinated polyethylene, polyethylene, laminates of copolymers of ethylene / vinyl alcohol (EVAL), polychloroprene (neoprene), nitrile/butadiene rubber (NBR or nitrile), polyvinyl chloride (PVC or vinyl), fluoroelastomer (Viton).

In the case of prolonged or frequently repeated contact, we recommend a protection class of at least 5 (breakthrough time greater than 240 minutes according to the standard EN 374).

If you are planning a short contact, it is recommended a protection class of at least 3 (breakthrough time greater than 60 minutes according to the standard EN 374).

Decontaminate and dispose of contaminated gloves.

Wear protective gloves in the handling of the just obtained polymer to avoid contact with traces of residual material which can be dangerous in contact with the skin.

Respiratory protection:

PPE for respiratory protection must be chosen and used for risks for the job.

In case of exceeding threshold value for daily exposure in the workplace of one or more of the substances present in the mixture, wear a mask with filter type A or universal type, the class of which (1, 2 or 3) will be chosen according to the limit concentration of use (ref. standard EN 141).

Thermal Hazards:

Wear protective gloves when handling the just formed polymer in order to avoid burns.

Environmental exposure controls:

Use only with adequate ventilation.

Provide general and/or local ventilation to keep levels of concentrations in the air below exposure limits.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Appearance and colour:	Black paste	--	--
Odour:	Light	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	N.A.	--	--
Flash point:	No	--	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	N.A.	--	--
Vapour density:	N.A.	--	--
Relative density:	1.70 g/cc	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition	N.A.	--	--

temperature:			
Viscosity:	tixo cps (25°C)	--	--
Explosive properties:	No	--	--
Oxidizing properties:	No	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

The product reacts with amines generating irreversible polymerization accompanied by considerable development of heat.

10.2. Chemical stability

The product is stable under the storage conditions described in Section 7.

10.3. Possibility of hazardous reactions

It may catch fire on contact with strong oxidizing agents.

10.4. Conditions to avoid

Avoid overheating the product for a long time.

Potentially violent decomposition can occur above 350°C.

Generation of gas during decomposition can cause pressure in closed systems. The increase of pressure can be very rapid.

Avoid static electricity discharges.

10.5. Incompatible materials

Avoid contact with strong oxidizing materials, acids and bases.

Avoid unintended contact with amines.

10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other substances.

The product can develop harmful and/or irritating vapors if heated to high temperatures because of evaporation of the more volatile fraction.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

N.A.

Toxicological information of the main substances found in the product:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

2,3-epoxypropyl o-tolyl ether - CAS: 2210-79-9

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg

If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Do not use when plants are in flower: the product is toxic for bees.

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) - CAS: 25068-38-6

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia 1.7 mg/l - Duration h: 48

Endpoint: LC50 - Species: Fish 1.5 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae 9.4 mg/l - Duration h: 72

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Daphnia 0.3 mg/l

c) Bacteria toxicity:

Endpoint: IC50 - Species: Bacteria > 100 mg/l - Duration h: 3

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

h) Toxicity:

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia > 100 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae > 100 mg/l - Duration h: 72

Endpoint: EC50 - Species: Bacteria > 100 mg/l - Duration h: 0.5

12.2. Persistence and degradability

None

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

SECTION 14: Transport information

14.1. UN number

ADR-UN number: 3082

IATA-Un number: 3082

IMDG-Un number: 3082

14.2. UN proper shipping name

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ADR-Shipping Name:	Environmentally hazardous substance, liquid, N.O.S. (epoxy resin)
IATA-Technical name:	Environmentally hazardous substance, liquid, N.O.S. (epoxy resin)
IMDG-Technical name:	Environmentally hazardous substance, liquid, N.O.S. (epoxy resin)
14.3. Transport hazard class(es)	
ADR-Class:	9
ADR-Label:	9
ADR - Hazard identification number:	90
IATA-Class:	9
IATA-Label:	9
IMDG-Class:	9
14.4. Packing group	
ADR-Packing Group:	III
IATA-Packing group:	III
IMDG-Packing group:	III
14.5. Environmental hazards	
Marine pollutant:	Marine pollutant
Most important toxic component:	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)
14.6. Special precautions for user	
Rail (RID):	9
IMDG-Technical name:	Materia pericolosa per l'ambiente, liquida, n.a.s. (resina epossidica)
IMDG-EMS:	FA-SF
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	N.A.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances). Dir. 99/45/EEC (Classification, packaging and labelling of dangerous preparations). Dir. 98/24/EC (Risks related to chemical agents at work). Dir. 2000/39/EC (Occupational exposure limit values); Dir. 2006/8/CE. Regulation (CE) n. 1907/2006 (REACH), Regulation (CE) n.1272/2008 (CLP), Regulation (CE) n.790/2009.

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3

Restriction 40

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Text of phrases referred to under heading 3:

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H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1,1A,1B	3.4.2/1-1A-1B	Skin Sensitisation, Category 1,1A,1B
Muta. 2	3.5/2	Germ cell mutagenicity, Category 2
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341	Calculation method
Aquatic Chronic 2, H411	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date.
It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Safety Data Sheet dated 2/8/2018, version 8

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

1.1. Product identifier

Mixture identification:

Trade name: DUNAPOX H 156 HARDENER

Trade code: 261017

Product type:

Hardener

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

Component for the production of epoxy polymers

1.3. Details of the supplier of the safety data sheet

Company:

DUNA-Corradini S.p.A.

Via Modena-Carpi, 388

41019 Soliera (MO)

Italy

Phone: +39 059 893911

Competent person responsible for the safety data sheet:

safety@dunagroup.com

1.4. Emergency telephone number

DUNA-Corradini S.p.A.

phone +39 059 893911

(8.00 - 18.00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP):

- ⚠ Warning, Acute Tox. 4, Harmful if swallowed.
- ⚠ Danger, Skin Corr. 1A, Causes severe skin burns and eye damage.
- ⚠ Danger, Eye Dam. 1, Causes serious eye damage.
- ⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.
- ⚠ Warning, Repr. 2, Suspected of damaging fertility or the unborn child.
- ⚠ Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

The full text for substance classification is reported in section 16.

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H361 Suspected of damaging fertility or the unborn child.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P202 Do not handle until all safety precautions have been read and understood.

P273 Avoid release to the environment.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse

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skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

P391 Collect spillage.

Special Provisions:

None

Contains

benzyl alcohol

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine and triethylenetetramine

Isophorondiamine

4-Tert-Buthylphenol

Triethylenetetramine: May produce an allergic reaction.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
>= 30% - < 50%	benzyl alcohol	Index number: 603-057-00-5 CAS: 100-51-6 EC: 202-859-9 REACH No.: 01-2119492630-38	<div> <div> </div> <div> </div> <div> </div> </div>
>= 20% - < 30%	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine and triethylenetetramine	EC: 947-989-3	<div> <div> </div> <div> </div> <div> </div> <div> </div> <div> </div> </div>
>= 20% - < 30%	Isophorondiamine	Index number: 612-067-00-9 CAS: 2855-13-2 EC: 220-666-8 REACH No.: 01-2119514687-32	<div> <div> </div> <div> </div> <div> </div> <div> </div> <div> </div> </div>
>= 5% - < 10%	4-Tert-Buthylphenol	Index number: 604-090-00-8 CAS: 98-54-4	<div> <div> </div> <div> </div> <div> </div> </div>

		EC: 202-679-0 REACH No.: 01-2119489419-21	⚠ 4.1/C1 Aquatic Chronic 1 H410
>= 5% - < 10%	Triethylenetetramine	Index number: 612-059-00-5 CAS: 90640-67-8 EC: 292-588-2 REACH No.: 01-2119487919-13	⚠ 3.1/4/Dermal Acute Tox. 4 H312 ⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 3.2/1A Skin Corr. 1A H314 ⚠ 3.4.2/1 Skin Sens. 1 H317 4.1/C3 Aquatic Chronic 3 H412

The full text of the hazard statements can be found in section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash generously with water and soap. Remove contaminated clothes and shoes. Wash carefully contaminated clothes with water before removing them or use gloves. Rinse for at least 10 minutes. Consult a doctor. In case of disorders or symptoms, avoid exposure to the substance. Wash clothes before reusing. Wash shoes carefully before reusing.

In case of eyes contact:

In case of contact with eyes, wash using water for at least 30 minutes, keep the eyes opened and consult an ophthalmologist. Remove contact lenses if possible. Protect uninjured eye.

In case of ingestion:

Seek a medical examination immediately and present this safety-data sheet.

In case of inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

Nothing specific.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO₂).

Water spray

Extinguishing media which must not be used for safety reasons:

Direct water jet

5.2. Special hazards arising from the substance or mixture

During a fire, the smoke can contain the original substances aside from combustion products of different compositions which could be toxic or irritating. Hazardous combustion products can be: phenolic compounds, nitrogen oxides, carbon monoxide and carbon dioxide.

5.3. Advice for firefighters

In case of fire, isolate promptly the area of the accident removing all the people. Actions which could involve a risk or are undertaken without the suitable training must be avoided.

Use clothes for fire-fighting, such as: self-contained compressed-air-operated breathing apparatus (EN 137), protective suits (EN 469), protective gloves (EN 659) and protective boots (HO A29 or A30).

Move undamaged containers from immediate hazard area if it can be done safely.

General information: cool down containers with water jets in order to avoid product decomposition and development of substances which could be potentially hazardous to health. Collect extinguishing water which must not be discharged in sewage. Dispose contaminated extinguishing water and fire residue in accordance with current legislation.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures
 - Wear personal protection equipment.
 - Remove persons to safety.
 - See protective measures under point 7 and 8.
- 6.2. Environmental precautions
 - Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
 - In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
- 6.3. Methods and material for containment and cleaning up
 - Suitable material for taking up: absorbing material, organic, sand.
 - Wash with plenty of water.
 - Contain and collect scrubbing water in compliance with the existing legislation.
- 6.4. Reference to other sections
 - See also section 8 and 13.

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
 - Avoid contact with skin and eyes and inhalation of vapors and mists.
 - Keep container tightly closed and always ensure adequate ventilation in environments in which the manipulation is done.
 - The product may generate vapors under pressure inside the container: open the cap of the container gradually and cautiously, gradually leave vent any vapors.
 - Before transfer operations, make sure that there are no incompatible residual materials in the receiving container.
 - Contaminated clothing should be changed before entering eating areas.
 - At work do not eat, do not drink and do not smoke.
 - Emergency showers and eye wash stations should be readily accessible.
- 7.2. Conditions for safe storage, including any incompatibilities
 - Keep away from sources of heat, flames and sparks.
 - Incompatible materials: see section 10.
 - It is recommended that the premises are cool and well-aerated to ensure fresh air all the time in the storage area.
 - Store in well-ventilated areas.
 - Store in a cool and dry place. Keep the product in the original container tightly closed. After using, seal the opened containers and keep them in a vertical position to avoid accidental leakages. Do not store the product in non-labelled containers.
 - Store in stainless steel or plastic-coated containers; do not to use iron containers or other reactive materials (for example aluminum and copper). Keep away from cooling below 5°C and warming above 35°C.
 - Do not store near acids.
- 7.3. Specific end use(s)
 - Refer to subsection 1.2 of this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters
 - No occupational exposure limit available
- DNEL Exposure Limit Values
 - benzyl alcohol - CAS: 100-51-6
 - Worker Industry: 22 ppm - Consumer: 5.4 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
 - Consumer: 4 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects
 - Worker Industry: 40 mg/kg - Consumer: 20 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects

Worker Industry: 110 ppm - Consumer: 27 ppm - Exposure: Human Inhalation -

Frequency: Short Term, systemic effects

Consumer: 20 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects

Worker Industry: 8 mg/kg - Consumer: 4 mg/kg - Exposure: Human Dermal - Frequency:

Long Term, systemic effects

Isophorondiamine - CAS: 2855-13-2

Consumer: 0.526 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Triethylenetetramine - CAS: 90640-67-8

Worker Industry: 5380 ppm - Consumer: 1600 ppm - Exposure: Human Inhalation -

Frequency: Short Term, systemic effects

Worker Industry: 0.57 mg/kg - Consumer: 0.25 mg/kg - Exposure: Human Dermal -

Frequency: Long Term, systemic effects

Worker Industry: 1 ppm - Consumer: 0.29 ppm - Exposure: Human Inhalation -

Frequency: Long Term, systemic effects

Worker Industry: 0.028 mg/cm² - Consumer: 0.43 mg/cm² - Exposure: Human Dermal -

Frequency: Long Term, local effects

Consumer: 8 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects

Consumer: 20 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects

Consumer: 1 mg/cm² - Exposure: Human Dermal - Frequency: Short Term, local effects

Consumer: 0.41 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

benzyl alcohol - CAS: 100-51-6

Target: Soil - Value: 0.45 mg/kg

Target: Sewage treatment plants - Value: 39 mg/l

Target: Marine water sediments - Value: 0.527 mg/kg

Target: Marine water - Value: 0.1 mg/l

Target: Fresh Water - Value: 1 mg/l

Target: Freshwater sediments - Value: 5.27 mg/kg

Target: Intermittent release - Value: 2.3 mg/l

Isophorondiamine - CAS: 2855-13-2

Target: Fresh Water - Value: 0.06 mg/l

Target: Marine water - Value: 0.006 mg/l

Target: Freshwater sediments - Value: 5.784 mg/kg

Target: Marine water sediments - Value: 0.578 mg/kg

Target: Intermittent release - Value: 0.23 mg/l

Target: Soil (agricultural) - Value: 1.121 mg/kg

Target: Sewage treatment plants - Value: 3.18 mg/l

Triethylenetetramine - CAS: 90640-67-8

Target: Fresh Water - Value: 0.19 mg/l

Target: Marine water - Value: 0.038 mg/l

Target: Freshwater sediments - Value: 95.9 mg/kg

Target: Marine water sediments - Value: 19.2 mg/kg

Target: Soil - Value: 19.1 mg/kg

Target: Sewage treatment plants - Value: 4.25 mg/l

Target: Food chain - Value: 0.18 mg/kg

8.2. Exposure controls

Eye protection:

Use safety glasses in compliance with regulation EN 166 in order to avoid exposure to liquid drops, sprays or dust.

Protection for skin:

PPE for the body should be selected based on the risks of the job.

We recommend the use of heavy cotton clothing or disposable Tyvek.

Protection for hands:

Wear resistant gloves when in contact with chemicals, in accordance with EN 374.

Among the examples of the materials for gloves that can offer appropriate protection are: butyl rubber, chlorinated polyethylene, polyethylene, laminates of copolymers of ethylene / vinyl alcohol (EVAL), polychloroprene (neoprene), nitrile/butadiene rubber (NBR or nitrile), polyvinyl

chloride (PVC or vinyl), fluoroelastomer (Viton).

In the case of prolonged or frequently repeated contact, we recommend a protection class of at least 5 (breakthrough time greater than 240 minutes according to the standard EN 374).

If you are planning a short contact, it is recommended a protection class of at least 3 (breakthrough time greater than 60 minutes according to the standard EN 374).

Decontaminate and dispose of contaminated gloves.

Wear protective gloves in the handling of the just obtained polymer to avoid contact with traces of residual material which can be dangerous in contact with the skin.

Respiratory protection:

PPE for respiratory protection must be chosen and used for risks for the job.

Breathing apparatuses should be used (if available) when there's the possibility to exceed the occupational exposure limit values. Otherwise, wear breathing apparatuses when side effects such as irritation to airways appear or when specified in your chemical risk assessment.

In case of exceeding threshold value for daily exposure in the workplace of one or more of the substances present in the mixture, wear a mask with filter type A or universal type, the class of which (1, 2 or 3) will be chosen according to the limit concentration of use (ref. standard EN 141).

Thermal Hazards:

Wear protective gloves when handling the just formed polymer in order to avoid burns.

Environmental exposure controls:

The emissions of production processes, including ventilation systems, should be monitored in order to comply with the existing legislation on environmental protection.

Refer to section 7 and section 13.

Appropriate engineering controls:

Provide a ventilation system (localised or not) in order to keep the concentrations below the occupational exposure limit values. Air intake systems must be designed so that air is removed from vapours/aerosols sources and from people working in the area. Provide eyewash fountains and safety showers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Appearance and colour:	Pale yellow liquid	--	--
Odour:	Amine like	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	>200 °C	--	--
Flash point:	>110 °C	--	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	Not available	--	--

Vapour density:	N.A.	--	--
Relative density:	1.010 g/cc	--	--
Solubility in water:	Insoluble	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	Not available	--	--
Auto-ignition temperature:	Not pyrophoric	--	--
Decomposition temperature:	N.A.	--	--
Viscosity:	60-90 cps (25°C)	--	--
Explosive properties:	Not explosive	--	--
Oxidizing properties:	Not oxydant	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

The product reacts with epoxy resin, generating an irreversible polymerization accompanied by a considerable development of heat.

10.2. Chemical stability

The product is stable under the storage conditions described in Section 7.

10.3. Possibility of hazardous reactions

It may catch fire on contact with strong oxidizing agents.

It may generate flammable gases on contact with elementary metals (alcohols and alkaline earth), strong reducing agents.

It may generate toxic gases in contact with oxidising mineral acids, halogenated organics, peroxides, organic hydroperoxides, strong oxidizing agents.

10.4. Conditions to avoid

Avoid static electricity discharges.

Keep away from heat and sources of ignition.

10.5. Incompatible materials

Avoid contact with organic acids (for example acetic acid, citric acid, etc.).

Violent reaction in contact with mineral acids.

Product slowly corrodes metals such as: copper, aluminum, zinc and galvanized surfaces.

10.6. Hazardous decomposition products

Hazardous decomposition products are ammonia, nitrogen oxides and carbon monoxide.

Nitric oxide can react with water vapor, forming corrosive nitric acid.

Thermal decomposition: 250-300°C.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

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a) acute toxicity

The product is classified: Acute Tox. 4 H302

b) skin corrosion/irritation

The product is classified: Skin Corr. 1A H314

c) serious eye damage/irritation

The product is classified: Eye Dam. 1 H318

d) respiratory or skin sensitisation

The product is classified: Skin Sens. 1 H317

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) Reproductive toxicity/toxicity to fertility

The product is classified: Repr. 2 H361

h) STOT-single exposure

Not classified

Based on available data, the classification criteria are not met

i) STOT-repeated exposure

Not classified

Based on available data, the classification criteria are not met

j) aspiration hazard

Not classified

Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

benzyl alcohol - CAS: 100-51-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 1620 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit = 2000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 4178 mg/l - Duration: 4h - Source: OCSE 403

b) skin corrosion/irritation:

Test: Skin Irritant - Species: Rabbit Slightly irritating - Source: OECD Test Guideline 404

c) serious eye damage/irritation:

Test: Eye Irritant - Species: Rabbit - Result: Positive - Source: OECD Test Guideline 405

d) respiratory or skin sensitisation:

Test: Skin Sensitization - Species: Guinea pig -Result: Negative

e) germ cell mutagenicity:

Based on available data, the classification criteria are not met

f) carcinogenicity:

Based on available data, the classification criteria are not met

g) Reproductive toxicity/toxicity to fertility:

Test: NOAEC - Species: Rat = 1072 mg/m³ - Notes: Possible harmful effects on sexual and reproductive functions.

h) STOT-single exposure:

Based on available data, the classification criteria are not met

i) STOT-repeated exposure:

Test: NOAEC - Route: Inhalation - Species: Rat = 1072 mg/m³ - Source: OCSE 412

Test: NOAEC - Route: Oral - Species: Rat = 400 mg/kg

j) aspiration hazard:

Irrelevant.

Isophorondiamine - CAS: 2855-13-2

a) acute toxicity:

- Test: LD50 - Route: Oral - Species: Rat = 1030 mg/kg - Source: Similar to OCSE method
Test: LC50 - Route: INHALDUST - Species: Rat > 5.01 mg/l - Duration: 4h - Source: OECD Test Guideline 403 - Based on available data, the classification criteria are not met
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg - Source: OECD Test Guideline 402 - Based on available data, the classification criteria are not met
- b) skin corrosion/irritation:
Test: Skin Corrosive - Species: Rabbit - Result: Positive - Source: Deduced from hazard classes of the substance
- c) serious eye damage/irritation:
Species: Rabbit - Result: Positive - Source: OECD Test Guideline 405 - Notes: It causes serious eye damage.
- d) respiratory or skin sensitisation:
Test: Skin Sensitization - Result: Positive - Source: OECD Test Guideline 406
Test: Respiratory Sensitization - No data available for the product
- e) germ cell mutagenicity:
Tests on bacterial cultures or mammalian cells haven't shown mutagenic effects. Tests on animals haven't shown mutagenic effects.
- f) carcinogenicity:
Based on available data, the classification criteria are not met
- h) STOT-single exposure:
Based on available data, the classification criteria are not met
- i) STOT-repeated exposure:
Based on available data, the classification criteria are not met
- j) aspiration hazard:
Based on available data, the classification criteria are not met
- 4-Tert-Buthylphenol - CAS: 98-54-4
- a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 4000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit 2288 mg/kg
- Triethylenetetramine - CAS: 90640-67-8
- a) acute toxicity:
Test: LD50 - Route: Skin - Species: Rat = 1465 mg/kg
Test: LD50 - Route: Oral - Species: Rat = 1716 mg/kg
- b) skin corrosion/irritation:
Test: Skin Corrosive - Result: Positive
- c) serious eye damage/irritation:
Test: Eye Corrosive - Result: Positive
- d) respiratory or skin sensitisation:
Test: Skin Sensitization - Result: Positive
- e) germ cell mutagenicity:
Test: MUTAG -Result: Negative

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
Use suitable abatement methods in order to prevent the release of the substance into the environment.

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The product is classified: Aquatic Chronic 2 - H411

benzyl alcohol - CAS: 100-51-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish - Pimephales promelas = 770 mg/l - Duration h: 1
Endpoint: LC50 - Species: Fish - Pimephales promelas = 460 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia - Daphnia magna = 230 mg/l - Duration h: 48 - Notes: OCSE 202
Endpoint: EC50 - Species: Daphnia - Daphnia magna = 66 mg/l - Duration h: 504 - Notes: OCSE 211
Endpoint: EC50 - Species: Algae - Pseudokirchnerella subcapitata = 770 mg/l - Duration h: 72 - Notes: OCSE 201

- b) Aquatic chronic toxicity:
 Endpoint: NOEC - Species: Daphnia - Daphnia magna = 51 mg/l - Duration h: 504 -
 Notes: OCSE 211
- Isophorondiamine - CAS: 2855-13-2
 - a) Aquatic acute toxicity:
 Endpoint: LC50 - Species: Fish - Leuciscus Idus = 110 mg/l - Duration h: 96 - Notes: CE 84/449
 Endpoint: EC50 - Species: Daphnia - Daphnia magna = 23 mg/l - Duration h: 48 - Notes: OECD TG 202
 Endpoint: EC50r - Species: Algae - Scenedesmus Subspicatus > 50 mg/l - Duration h: 72 - Notes: CE 88/302
 Endpoint: NOEC - Species: Algae - Scenedesmus Subspicatus = 1.5 mg/l - Duration h: 72 - Notes: CE 88/302
 - b) Aquatic chronic toxicity:
 Endpoint: NOEC - Species: Daphnia - Daphnia magna = 3 mg/l - Duration h: 504 - Notes: OECD TG 202
 - c) Bacteria toxicity:
 Endpoint: EC10 - Species: Bacteria = 1120 mg/l - Duration h: 18 - Notes: Bringmann und Kuhn, Z. Wasser Abwasser Forsch. 10, 87-98 (1977)
- 4-Tert-Butylphenol - CAS: 98-54-4
 - a) Aquatic acute toxicity:
 Endpoint: LC50 - Species: Fish 1.6 mg/l - Duration h: 96
 Endpoint: IC50 - Species: Algae - Scenedesmus Subspicatus 11.2 mg/l - Duration h: 72
 Endpoint: EC50 - Species: Daphnia - Daphnia magna 3.9 mg/l - Duration h: 48
- Triethylenetetramine - CAS: 90640-67-8
 - a) Aquatic acute toxicity:
 Endpoint: EC50 - Species: Algae - Scenedesmus Subspicatus = 20 mg/l - Duration h: 72
 Endpoint: EC50 - Species: Daphnia - Daphnia magna = 31.1 mg/l - Duration h: 48
 Endpoint: LC50 - Species: Fish = 330 mg/l - Duration h: 96
 Endpoint: NOEC - Species: Algae - Scenedesmus Subspicatus = 1.34 mg/l - Duration h: 72
 - b) Aquatic chronic toxicity:
 Endpoint: NOEC - Species: Daphnia - Daphnia magna = 1.9 mg/l - Duration h: 504
 - c) Bacteria toxicity:
 Endpoint: NOEC - Species: Bacteria = 42.5 mg/l - Duration h: 0.5
 Endpoint: EC50 - Species: Bacteria = 800 mg/l - Duration h: 0.5
- 12.2. Persistence and degradability
 No data available for the product
- benzyl alcohol - CAS: 100-51-6
 Biodegradability: Easily biodegradable - Test: Oxygen consumption - Duration: 14 d - %: 94 - Notes: OECD TG 301C
 Biodegradability: Easily biodegradable - Test: Dissolved organic carbon - Duration: 21 d - %: 96 - Notes: OECD TG 301A
- Isophorondiamine - CAS: 2855-13-2
 Biodegradability: Non-readily biodegradable - Test: N.A. - Duration: N.A. - %: 8 - Notes: CE 79/831
- 12.3. Bioaccumulative potential
- benzyl alcohol - CAS: 100-51-6
 Bioaccumulation: Low bioaccumulation potential - Test: N.A. N.A. - Duration: N.A. - Notes: N.A.
- Isophorondiamine - CAS: 2855-13-2
 Bioaccumulation: Not bioaccumulative - Test: N.A. N.A. - Duration: N.A. - Notes: Due to the fact that the partition coefficient between ethanol and water is relatively low, no significant concentration values of the substance are expected in organisms.
- Triethylenetetramine - CAS: 90640-67-8
 Bioaccumulation: Low bioaccumulation potential - Test: Log Kow - Partition coefficient n-octanol/water -2.65 - Duration: N.A. - Notes: N.A.
- 12.4. Mobility in soil
- Isophorondiamine - CAS: 2855-13-2
 Mobility in soil: N.A. Test: N.A. N.A. Duration: N.A. Notes: The mobility of the substance in

soil is not compromised by deposits (absorbed) in soil. The reaction of distribution in the environment makes it probable to find the substance in water. In the atmosphere, the substance is rapidly degraded by light.

Triethylenetetramine - CAS: 90640-67-8

Mobility in soil: N.A. Test: Partition coefficient soil/water 4000 - Duration: N.A. - Notes: N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

No data available for the product

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information



14.1. UN number

ADR-UN Number: 2735

IATA-UN Number: 2735

IMDG-UN Number: 2735

14.2. UN proper shipping name

ADR-Shipping Name: POLYAMINES, LIQUID, CORROSIVE,
N.O.S.(Isophorondiamine)

IATA-Shipping Name: POLYAMINES, LIQUID, CORROSIVE,
N.O.S.(Isophorondiamine)

IMDG-Shipping Name: POLYAMINES, LIQUID, CORROSIVE,
N.O.S.(Isophorondiamine)

14.3. Transport hazard class(es)

ADR-Class: 8

ADR - Hazard identification number: 80

IATA-Class: 8

IATA-Label: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

ADR-Environmental Pollutant: Yes

IMDG-Marine pollutant: Marine Pollutant

14.6. Special precautions for user

ADR-Subsidiary risks: -

ADR-S.P.: 274

ADR-Transport category (Tunnel restriction code): 2 (E)

IATA-Passenger Aircraft: 851

IATA-Subsidiary risks: -

IATA-Cargo Aircraft: 855

IATA-S.P.: A3 A803

IATA-ERG: 8L

IMDG-EmS: F-A , S-B

IMDG-Subsidiary risks: -

IMDG-Stowage and handling: Category A

IMDG-Segregation: SG35

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
 Dir. 98/24/EC (Risks related to chemical agents at work)
 Dir. 2000/39/EC (Occupational exposure limit values)
 Regulation (EC) n. 1907/2006 (REACH)
 Regulation (EC) n. 1272/2008 (CLP)
 Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
 Regulation (EU) 2015/830
 Regulation (EU) n. 286/2011 (ATP 2 CLP)
 Regulation (EU) n. 618/2012 (ATP 3 CLP)
 Regulation (EU) n. 487/2013 (ATP 4 CLP)
 Regulation (EU) n. 944/2013 (ATP 5 CLP)
 Regulation (EU) n. 605/2014 (ATP 6 CLP)
 Regulation (EU) n. 2015/1221 (ATP 7 CLP)
 Regulation (EU) n. 2016/918 (ATP 8 CLP)
 Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

No restriction.

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Text of phrases referred to under heading 3:

H332 Harmful if inhaled.

H319 Causes serious eye irritation.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

H318 Causes serious eye damage.

H315 Causes skin irritation.

H361 Suspected of damaging fertility or the unborn child in contact with skin and if swallowed.

H410 Very toxic to aquatic life with long lasting effects.

Hazard class and hazard category	Code	Description
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4

Skin Corr. 1	3.2/1	Skin corrosion, Category 1
Skin Corr. 1A	3.2/1A	Skin corrosion, Category 1A
Skin Corr. 1B	3.2/1B	Skin corrosion, Category 1B
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1,1A,1B	3.4.2/1-1A-1B	Skin Sensitisation, Category 1,1A,1B
Repr. 2	3.7/2	Reproductive toxicity, Category 2
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 2: Hazards identification
SECTION 3: Composition/information on ingredients
SECTION 4: First aid measures
SECTION 5: Firefighting measures
SECTION 6: Accidental release measures
SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 9: Physical and chemical properties
SECTION 11: Toxicological information
SECTION 12: Ecological information
14. TRANSPORT INFORMATION
SECTION 15: Regulatory information
SECTION 16: Other information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Acute Tox. 4, H302	Calculation method
Skin Corr. 1A, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361	Calculation method
Aquatic Chronic 2, H411	Calculation method

Safety Data Sheet

DUNAPOX H 156 HARDENER



This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.