






Safety Data Sheet dated 13/2/2017, version 1

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

- 1.1. Product identifier
Mixture identification:
Trade name: DUNAPOX BLACK SEA 125 RESIN
Trade code: 260270
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.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.

Safety Data Sheet

DUNAPOX BLACK SEA 125 RESIN



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
>= 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
>= 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
>= 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:		--	--
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:	1,65 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 temperature:	N.A.	--	--
Viscosity:	TIXO cps (25°C)	--	--
Explosive properties:	No	--	--
Oxidizing properties:	No	--	--

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

Safety Data Sheet

DUNAPOX BLACK SEA 125 RESIN



- 14.2. UN proper shipping name
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
- 14.6. Special precautions for user
Rail (RID): 9
IMDG-Technical name: Environmentally hazardous substance, liquid, N.O.S. (epoxy resin)
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:

- 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.

1. Identification

Product identifier DUNAPOX H 156 HARDENER

Other means of identification

Product code 261017

Recommended use Industrial chemical.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier

Company name DUNA-USA Inc.

Address 4210 FM 1405 Baytown, TX, 77523 United States
Baytown, TX, 77523
United States

Telephone number 281-383-3862

e-mail franco.sala@dunagroup.com

Contact person Franco Sala

Emergency telephone number 281-383-3862

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 4
Acute toxicity, dermal	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Sensitization, skin	Category 1
Reproductive toxicity (fertility) (oral)	Category 2

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 2
Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of damaging fertility by ingestion. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Benzyl alcohol	100-51-6	30 - 50
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	2855-13-2	20 - 30
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	38294-64-3	Proprietary
4-Tert-butylphenol	98-54-4	Proprietary
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8	Proprietary
N,N-Bis(2-aminoethyl)ethylene diamine	4097-89-6	Proprietary
Triethylenetetramine	112-24-3	Proprietary

Composition comments	All concentrations are in percent by weight unless otherwise indicated. The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.
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4. First-aid measures

Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes respiratory tract burns. Causes digestive tract burns. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Low vapor concentrations may cause a temporary visual disturbance known as "blue haze" or "halo vision".
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.



General information

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Alcohol resistant foam. Powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

This product is not flammable. However: Will burn if involved in a fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Persons susceptible to allergic reactions should not handle this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Benzyl alcohol (CAS 100-51-6)	TWA	44.2 mg/m ³
Triethylenetetramine (CAS 112-24-3)	TWA	10 ppm 6 mg/m ³
		1 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).



Exposure guidelines

US WEEL Guides: Skin designation

Triethylenetetramine (CAS 112-24-3)

Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Skin protection

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Pale liquid.

Physical state

Liquid.

Form

Liquid.

Color

Yellow.

Odor

Amine-like.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

392 °F (200 °C)

Flash point

230.0 °F (110.0 °C) Closed Cup

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Relative density

1.01

Relative density temperature

68 °F (20 °C)

Solubility(ies)

Solubility (water)

Not available.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.



Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Avoid temperatures exceeding the flash point.
Incompatible materials	Strong acids. Strong oxidizing agents. Alkaline metals. Peroxides. Phenols. Copper and copper alloys. Acid chlorides. Acid anhydrides.
Hazardous decomposition products	Ammonia. Carbon oxides. Hydrocyanic acid gas. Nitrogen oxides. Phenolic compounds.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Causes respiratory tract burns.
Skin contact	Causes severe skin burns. Harmful in contact with skin. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed. Suspected of damaging fertility by ingestion.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes digestive tract burns. Causes respiratory tract burns. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Low vapor concentrations may cause a temporary visual disturbance known as "blue haze" or "halo vision".

Information on toxicological effects

Acute toxicity	Harmful in contact with skin. Harmful if swallowed.
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Components	Species	Test Results
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine (CAS 2855-13-2)		
Acute		
Oral		
LD50	Rat	1030 mg/kg
4-Tert-butylphenol (CAS 98-54-4)		
Acute		
Dermal		
LD50	Rabbit	2318 mg/kg
Oral		
LD50	Rat	3620 mg/kg
Benzyl alcohol (CAS 100-51-6)		
Acute		
Dermal		
LD50	Rabbit	2000 mg/kg
Inhalation		
<i>Aerosol</i>		
LC50	Rat	> 4.178 mg/l, 4 Hours
Oral		
LD50	Rat	1610 mg/kg
Triethylenetetramine (CAS 112-24-3)		
Acute		
Dermal		
LD50	Rabbit	805 mg/kg

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
NTP Report on Carcinogens	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
Reproductive toxicity	Suspected of damaging fertility.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine (CAS 2855-13-2)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Scenedesmus subspicatus	> 50 mg/l, 72 hours
Crustacea	EC50	Daphnia magna	23 mg/l, 48 hours
Fish	LC50	Leuciscus idus	110 mg/l, 96 hours
<i>Chronic</i>			
Algae	EC50	Scenedesmus subspicatus	11 mg/l, 72 hours
Crustacea	NOEC	Daphnia magna	3 mg/l, 21 days
4-Tert-butylphenol (CAS 98-54-4)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Selenastrum capricornutum	2.4 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	3.4 mg/l, 48 Hours
Fish	LC50	Cyprinus carpio	5.1 mg/l, 96 Hours
<i>Chronic</i>			
Crustacea	NOEC	Daphnia magna	0.73 mg/l, 21 days
Fish	NOEC	Pimephales promelas	0.01 mg/l, 128 days
Benzyl alcohol (CAS 100-51-6)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Algae	700 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	202 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	460 mg/l, 96 hours

Persistence and degradability The product is not expected to be biodegradable.

Bioaccumulative potential



Partition coefficient n-octanol / water (log Kow)

Benzyl alcohol (CAS 100-51-6)

1.1

Mobility in soil

No data available.

Other adverse effects

The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information**DOT****UN number**

UN2735

UN proper shipping name

Amines, liquid, corrosive, n.o.s (3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)

Transport hazard class(es)**Class**

8

Subsidiary risk

-

Label(s)

8

Packing group

III

Environmental hazards**Marine pollutant**

Yes

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

Special provisions

IB3, T7, TP1, TP28

Packaging exceptions

154

Packaging non bulk

203

Packaging bulk

241

IATA**UN number**

UN2735

UN proper shipping name

Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)

Transport hazard class(es)**Class**

8

Subsidiary risk

-

Packing group

III

Environmental hazards

Yes

ERG Code

8L

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

IMDG**UN number**

UN2735

UN proper shipping name

AMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)

Transport hazard class(es)**Class**

8

Subsidiary risk

-

Packing group

III

Environmental hazards**Marine pollutant**

Yes



EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.
General information	IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are listed on or exempt from the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. Massachusetts RTK - Substance List

Benzyl alcohol (CAS 100-51-6)

Triethylenetetramine (CAS 112-24-3)

US. New Jersey Worker and Community Right-to-Know Act

3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine (CAS 2855-13-2)

Triethylenetetramine (CAS 112-24-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Benzyl alcohol (CAS 100-51-6)

Triethylenetetramine (CAS 112-24-3)

US. Rhode Island RTK

Not regulated.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes



Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 12-May-2017
Revision date -
Version # 01
HMIS® ratings Health: 3*
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer

DUNA-USA Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

