

SAFETY DATA SHEET

Blasorun 5

MSDS no. AA04104-0002918502

In accordance with the Standard for Classification and Labeling of Chemical Substance and Safety Data Sheet,
Article 10 Paragraph 1

Section 1. Chemical product and company identification

A. Product name : Blasorun 5
Product code : 29185-02

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

Identified uses

Industrial use only.
Metal working fluids
Cleaner.

Uses advised against

Consumer use.

C. Manufacturer : BLASER SWISSLUBE AG
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this SDS** : reach@blaser.com

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Section 2. Hazards identification

A. Hazard classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract
irritation) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3
This product is classified in accordance with the Industrial Safety and Health Act and
the Chemical Control Act.

B. GHS label elements, including precautionary statements

Symbol :



Signal word : Warning

Section 2. Hazards identification

Hazard statements	: H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H412 - Harmful to aquatic life with long lasting effects.
<u>Precautionary statements</u>	
Prevention	: P280 - Wear protective gloves. Wear eye or face protection. P273 - Avoid release to the environment. P261 - Avoid breathing vapor. P264 - Wash thoroughly after handling.
Response	: P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P302 + P352 - IF ON SKIN: Wash with plenty of water. P362 + P364 - Take off contaminated clothing and wash it before reuse. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention. P321 - Specific treatment (see the label).
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

C. Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

Ingredient name	Classification	Identifiers	%
2-aminoethanol	FLAMMABLE LIQUIDS - Category 4 CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 3	CAS: 141-43-5	≤10
neodecanoic acid	ACUTE TOXICITY (oral) - Category 4	CAS: 26896-20-8	≤9.5
2,2'-(methylinino)diethanol	EYE IRRITATION - Category 2A	CAS: 105-59-9	≤10
2-amino-2-methylpropanol	SKIN IRRITATION -	CAS: 124-68-5	≤10

Section 3. Composition/information on ingredients

	Category 2 EYE IRRITATION - Category 2A AQUATIC HAZARD (LONG-TERM) - Category 3		
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	CAS: 77-92-9	≤5
Alcohols, C16-18, ethoxylated propoxylated	AQUATIC HAZARD (LONG-TERM) - Category 3	CAS: 68002-96-0	≤3
benzotriazole	ACUTE TOXICITY (oral) - Category 4 EYE IRRITATION - Category 2A AQUATIC HAZARD (LONG-TERM) - Category 2	CAS: 95-14-7	≤1.5
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-(octyloxy)-	SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1	CAS: 53563-70-5	≤5
dicyclohexylamine	CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1	CAS: 101-83-7	≤1
potassium hydroxide	CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1	CAS: 1310-58-3	<1
2-aminobutan-1-ol	FLAMMABLE LIQUIDS - Category 4 CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 AQUATIC HAZARD	CAS: 96-20-8	<1

Section 3. Composition/information on ingredients

	(ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3		
1,2-Ethanediamine, N1,N1,N2,N2-tetramethyl-, polymer with 1,1'-oxybis[2-chloroethane]	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1	CAS: 31075-24-8	≤0.085

Additional information :

Neutralisation product: Equilibrium of Ionic Pairs according to REACH Annex V, 4.

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

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

Section 4. First aid measures

- A. Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Check for and remove any contact lenses. Get medical attention.
- B. Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- C. Inhalation** : Avoid breathing vapor or mist. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- D. Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- E. Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

A. Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

B. Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

C. Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

B. Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

C. Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage

A. Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

B. Conditions for safe storage, including any incompatibilities

- : Store between the following temperatures: 0 to 40°C (32 to 104°F). Shelf life: (minimum) 24 months. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

A. Control parameters

Occupational exposure limits

-aminoethanol

ISHA Article 42 (Republic of Korea, 1/2020)

STEL 15 minutes: 6 ppm.

TWA 8 hours: 3 ppm.

potassium hydroxide

ISHA Article 42 (Republic of Korea, 1/2020)

CEIL: 2 mg/m³.

Biological exposure indices

No exposure indices known.

B. Appropriate engineering controls

- : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

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

C. Personal protective equipment

Respiratory protection

- : A respirator is not needed under normal and intended conditions of product use. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Eye protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Wear suitable gloves tested to EN374. Nitrile gloves. thickness 0.3 mm (minimum) .
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved before handling this product.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

A. Appearance

Physical state : Liquid.

Color : Amber.

B. Odor : Characteristic.

C. Odor threshold : Not available.

D. pH : 8.9 to 9.9 [Conc. (% w/w): 5%]

E. Melting/freezing point : Not available.

Pour point : -43°C (-45.4°F)

F. Boiling point or initial boiling point and boiling range : Not available.

G. Flash point : Open cup: Not applicable.

Fire point : Not available.

H. Evaporation rate : Not available.

I. Flammability (solid, gas) : Not available.

J. Lower and upper explosive (flammable) limits : Not available.

K. Vapor pressure : Not available.

L. Solubility in water : Not available.

Dispersibility properties :

M. Vapor density : Not available.

N. Relative density : Not available.

Density : 1.059 g/cm³ [20°C (68°F)]

O. Partition coefficient: n-octanol/water : Not applicable.

P. Auto-ignition temperature : Not available.

Q. Decomposition temperature : Not available.

R. Viscosity : Dynamic (room temperature): Not available.
 Kinematic (room temperature): Not available.
 Kinematic (40°C (104°F)): 9 mm²/s (9 cSt)

Section 9. Physical and chemical properties

- Flow time (ISO 2431) : Not available.
- S. Molecular weight : Not applicable.

Particle characteristics

- Median particle size : Not applicable.

Section 10. Stability and reactivity

- A. Chemical stability : Shelf life: (minimum) 24 months.
- Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
- B. Conditions to avoid : No specific data.
- C. Incompatible materials : No specific data.
- D. Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

A. Information on the likely routes of exposure

Not available.

Potential acute health effects

- Inhalation : May cause respiratory irritation.
- Ingestion : No known significant effects or critical hazards.
- Skin contact : Causes skin irritation.
- Eye contact : Causes serious eye irritation.

Over-exposure signs/symptoms

- Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Ingestion : No specific data.
- Skin contact : Adverse symptoms may include the following:
irritation
redness
- Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

B. Health hazards

Acute toxicity

Product/ingredient name	Result
2-aminoethanol	Rat - Oral - LD50 1720 mg/kg
-	Rabbit - Dermal - LD50 2504 mg/kg
neodecanoic acid	Rat - Dermal - LD50 3640 mg/kg
-	Rat - Oral - LD50 >2000 mg/kg
2,2'-(methylimino)diethanol	Rat - Oral - LD50 4780 mg/kg
-	Rabbit - Dermal - LD50

Section 11. Toxicological information

2-amino-2-methylpropanol	>2000 mg/kg Rabbit - Dermal - LD50
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	>2000 mg/kg Rabbit - Dermal - LD50
Alcohols, C16-18, ethoxylated propoxylated	>2000 mg/kg Rat - Oral - LD50
benzotriazole	>2000 mg/kg Rat - Oral - LD50
-	500 mg/kg Rabbit - Dermal - LD50
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-(octyloxy)-dicyclohexylamine	>2000 mg/kg Rat - Oral - LD50
-	>2000 mg/kg Rat - Oral - LD50
-	200 mg/kg Rabbit - Dermal - LD50
potassium hydroxide	200 mg/kg Rat - Oral - LD50
1,2-Ethanediamine, N1,N1,N2, N2-tetramethyl-, polymer with 1,1'-oxybis [2-chloroethane]	333 to 338 mg/kg Rat - Oral - LD50
-	1951 mg/kg Rabbit - Dermal - LD50
-	>2000 mg/kg Rat - Inhalation - LC50 Vapor
	5.8 mg/l [4 hours]

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name

2-aminoethanol

potassium hydroxide

-

-

Result

Rabbit - Skin - Moderate irritant

Amount/concentration applied: 505 mg

Guinea pig - Skin - Severe irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 50 mg

Human - Skin - Severe irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 50 mg

Rabbit - Skin - Severe irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 50 mg

Conclusion/Summary [Product] : pH value - Used for classification

Serious eye damage/eye irritation

Product/ingredient name

2-aminoethanol

1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)

potassium hydroxide

Result

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 250 ug

Rabbit - Eyes - Mild irritant

Duration of treatment/exposure: 0.5 minutes

Amount/concentration applied: 5 mg

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 1 mg

Conclusion/Summary [Product] : pH value - Used for classification

Section 11. Toxicological information

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

CMR - ISHA Article 42 Occupational Exposure Limits

Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
2-aminoethanol	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Blasorun 5	>2000	>2000	N/A	97.7	N/A
2-aminoethanol	1720	1100	N/A	11	N/A
neodecanoic acid	500	3640	N/A	N/A	N/A
2,2'-(methylimino)diethanol	4780	2500	N/A	N/A	N/A
2-amino-2-methylpropanol	N/A	2500	N/A	N/A	N/A
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	N/A	2500	N/A	N/A	N/A
Alcohols, C16-18, ethoxylated propoxylated	2500	N/A	N/A	N/A	N/A
benzotriazole	500	2500	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-(octyloxy)-	2500	N/A	N/A	N/A	N/A
dicyclohexylamine	200	300	N/A	N/A	N/A
potassium hydroxide	500	N/A	N/A	N/A	N/A
2-aminobutan-1-ol	500	N/A	N/A	N/A	N/A
1,2-Ethanediamine, N1,N1,N2,N2-tetramethyl-, polymer with 1,1'-oxybis[2-chloroethane]	1951	2500	N/A	11	N/A

Section 12. Ecological information

A. Ecotoxicity

Product/ingredient name

2-aminoethanol

Result

Acute - LC50 - Fresh water

Fish - Bluegill - *Lepomis macrochirus*

Size: 40 to 50 mm

329160 µg/l [96 hours]

Effect: Mortality

Chronic - NOEC

Fish

1.2 mg/l [30 days]

Chronic - NOEC

Daphnia

0.85 mg/l [21 days]

neodecanoic acid

Acute - LC50

Fish

>100 mg/l [96 hours]

-

Acute - EC50

Daphnia

>100 mg/l [48 hours]

2-amino-2-methylpropanol

LC50

Daphnia

193 mg/l [48 hours]

Alcohols, C16-18, ethoxylated propoxylated

LC50

OECD 203

Fish

>100 mg/l [96 hours]

benzotriazole

Acute - EC50

OECD

Section 12. Ecological information

	Daphnia - Water flea - <i>Daphnia galeata</i>
	Age: <24 hours
	15.8 mg/l [48 hours]
	Effect: Intoxication
-	LC50
	Fish
	180 mg/l [96 hours]
-	EC50
	Algae
	75 mg/l [72 hours]
dicyclohexylamine	Acute - LC50
	Fish
	12 mg/l [96 hours]
-	Acute - EC50
	Daphnia
	8 mg/l [48 hours]
-	Acute - NOEC
	Daphnia
	0.016 mg/l [21 days]
-	LC50
	Algae
	0.38 mg/l [72 hours]
-	NOEC
	Algae
	0.013 mg/l [72 hours]
2-aminobutan-1-ol	LC50
	Fish - Goldfish
	270 mg/l [4 days]
-	NOEC
	Algae
	0.11 mg/l [4 days]
1,2-Ethanediamine, N1,N1,N2, N2-tetramethyl-, polymer with 1,1'-oxybis [2-chloroethane]	Acute - EC50
	Daphnia
	0.37 mg/l [48 hours]
-	Acute - LC50 - Fresh water
	Fish
	0.047 mg/l [96 hours]
-	Acute - NOEC - Fresh water
	Fish
	0.037 mg/l [96 hours]

Conclusion/Summary [Product] : Not available.

B. Persistence and degradability

Not available.

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzotriazole	-	-	Not readily
2-aminobutan-1-ol	-	93%; <28 day(s)	Readily

C. Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
2-aminoethanol	-1.31	-	Low
neodecanoic acid	2.1	<225	Low
2,2'-(methylimino)diethanol	-1.08	-	Low
2-amino-2-methylpropanol	-0.63	-	Low
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	-1.72	-	Low
benzotriazole	1.44	-	Low
dicyclohexylamine	2.724	-	Low
2-aminobutan-1-ol	-0.45	-	Low

D. Mobility in soil

Soil/Water partition coefficient : Not available.

E. Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

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

Section 14. Transport information

	UN	IMDG	IATA
A. UN number	Not regulated.	Not regulated.	Not regulated.
B. UN proper shipping name	Not regulated.	Not regulated.	Not regulated.
C. Transport hazard class(es)	Not regulated.	Not regulated.	Not regulated.
D. Packing group	Not regulated.	Not regulated.	Not regulated.
E. Environmental hazards	No.	No.	No.

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

Section 14. Transport information

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA article 117 (Harmful substances prohibited from manufacture) : None of the components are listed.

ISHA article 118 (Harmful substances requiring permission) : None of the components are listed.

Article 2 of Youth Protection Act on Substances Hazardous to Youth : Not applicable.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

2-aminoethanol
potassium hydroxide

ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors) : None of the components are listed.

ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement) : The following components are listed: ethanolamine

ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up) : None of the components are listed.

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: ethanolamine

B. Regulation according to Chemicals Control Act

Article 11 (TRI) : None of the components are listed.

Article 18 Prohibited (K-Reach Article 27) : None of the components are listed.

Article 19 Candidate substances subject to authorization (K-Reach Article 25) : None of the components are listed.

Article 19 Subject to authorization (K-Reach Article 25) : None of the components are listed.

Article 20 Toxic Chemicals (K-Reach Article 20) : Not applicable

Article 20 Restricted (K-Reach Article 27) : None of the components are listed.

Section 15. Regulatory information

Article 39 (Accident Precaution Chemicals)

Not listed.

MoE 2021-51 - Regulations on the quantity of toxic substances, restricted substances, prohibited substances and permitted substances

Ingredient name	Higher regulated quantity	Lower regulated quantity
dicyclohexylamine	500 tonnes	20 tonnes

Existing Chemical Substances Subject to Registration : The following components are listed: Dicyclohexylamine; N-Cyclohexylcyclohexanamine, Potassium hydroxide

C. Dangerous Materials Safety Management Act : Not applicable.

D. Wastes regulation : Dispose of contents and container in accordance with all local, regional, national and international regulations.

E. Regulation according to other foreign laws

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

List name	Ingredient name	Status
Schedule III	2,2'-(methylimino)diethanol 2,2',2''-nitritotriethanol	Listed Listed

Montreal Protocol

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Republic of Korea : All components are listed or exempted.

Section 16. Other information

A. References : - Registry of Toxic Effects of Chemical Substances
- United States Environmental Protection Agency ECOTOX

B. Date of issue/Date of revision : 2026년03월13일

C. Version : 1.06

Date of printing : 2026년03월13일

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D. Other

Indicates information that has changed from previously issued version.

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

Section 16. Other information

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available

SGG = Segregation Group

UN = United Nations

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.