

SAFETY DATA SHEET



Additive R01

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013

Section 1. Chemical product and company identification

GHS product identifier : Additive R01

Article No. : 29189-01

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

Identified uses

Industrial use only.
Metal working fluids
Additive

Uses advised against

Consumer use.

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Section 2. Hazards identification

Classification of the substance or mixture according to GB 13690-2009 and GB 30000-2013

Emergency overview

Liquid.

Yellow to red.

Amine-like.

H303 + H313 - May be harmful if swallowed or in contact with skin.

H314 - Causes severe skin burns and eye damage.

H319 - Causes serious eye irritation.

H412 - Harmful to aquatic life with long lasting effects.

IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN (or hair): Immediately call a POISON CENTER or doctor. If eye irritation persists: Get medical advice or attention.

See Section 12 for environmental precautions.

Section 2. Hazards identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 5
 ACUTE TOXICITY (dermal) - Category 5
 SKIN CORROSION/IRRITATION - Category 1B
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
 AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H303 + H313 - May be harmful if swallowed or in contact with skin.
 H314 - Causes severe skin burns and eye damage.
 H319 - Causes serious eye irritation.
 H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

: P280 - Wear protective gloves, protective clothing and eye or face protection.
 P273 - Avoid release to the environment.
 P264 - Wash thoroughly after handling.

Response

: P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
 P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
 P363 - Wash contaminated clothing 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.

Storage

: P405 - Store locked up.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Physical and chemical hazards

: No known significant effects or critical hazards.

Health hazards

: May be harmful if swallowed or in contact with skin. Causes severe skin burns and eye damage. Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

: Adverse symptoms may include the following:
 pain
 watering
 redness

Inhalation

: No specific data.

Skin contact

: Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur

Ingestion

: Adverse symptoms may include the following:
 stomach pains

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

Section 2. Hazards identification

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Environmental hazards : Harmful to aquatic life with long lasting effects.

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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	Identifiers
2-butoxyethanol	≥10 - ≤20	CAS: 111-76-2
2-aminoethanol	≥10 - ≤15	CAS: 141-43-5
neodecanoic acid	≤10	CAS: 26896-20-8
2-amino-2-methylpropanol	≤5	CAS: 124-68-5
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, hydrate (1:1)	≤4	CAS: 5949-29-1
Fatty acids, castor-oil, polymd.	≤4	CAS: 68604-47-7
2,2',2''-nitrilotriethanol	≤3	CAS: 102-71-6
2,2'-(methylimino)diethanol	≤3	CAS: 105-59-9
benzotriazole	≤2	CAS: 95-14-7
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-(octyloxy)-	≤3	CAS: 53563-70-5
sebacic acid	≤1.5	CAS: 111-20-6
dicyclohexylamine	<1	CAS: 101-83-7

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

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Section 4. First aid measures

- Inhalation** : Avoid breathing vapor or mist. Get medical attention immediately. Call a poison center or physician. 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. 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.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May be harmful in contact with skin.
- Ingestion** : May be harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

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

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

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

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

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : 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

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

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

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

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

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.

- 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

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2-butoxyethanol	GBZ 2.1 (China, 11/2022) PC-TWA 8 hours: 97 mg/m ³ .
2-aminoethanol	GBZ 2.1 (China, 11/2022) PC-TWA 8 hours: 8 mg/m ³ . PC-STEL 15 minutes: 15 mg/m ³ .
2,2',2''-nitrilotriethanol	ACGIH TLV (United States, 7/2023) TWA 8 hours: 5 mg/m ³ .

Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : 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.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin 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.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved before handling this product.
- 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.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

- Physical state** : Liquid.
- Color** : Yellow to red.
- Odor** : Amine-like.
- Odor threshold** : Not available.
- pH** : 8.9 to 9.9 [Conc. (% w/w): 5%]
- Melting point/freezing point** : Not available.
- Pour point** : <0°C (<32°F)
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Open cup: Not applicable.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** : Not available.
- Relative vapor density** : Not available.
- Relative density** : Not available.
- Density** : 1.029 g/cm³ [20°C (68°F)]
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.

Section 9. Physical and chemical properties and safety characteristics

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): 11 mm²/s (11 cSt)

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : Shelf life: (minimum) 24 months.

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

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name

Result

2-butoxyethanol

Rat - Oral - LD50

1480 mg/kg

Rabbit - Dermal - LD50

400 mg/kg

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-amino-2-methylpropanol

Rabbit - Dermal - LD50

>2000 mg/kg

citric acid

Rabbit - Dermal - LD50

>2000 mg/kg

Fatty acids, castor-oil, polymd.

Rat - Oral - LD50

>2000 mg/kg

2,2',2"-nitrilotriethanol

Rabbit - Dermal - LD50

>2000 mg/kg

Rat - Oral - LD50

6400 mg/kg

2,2'-(methylimino)diethanol

Rat - Oral - LD50

4780 mg/kg

Rabbit - Dermal - LD50

>2000 mg/kg

benzotriazole

Rat - Oral - LD50

500 mg/kg

Rabbit - Dermal - LD50

Section 11. Toxicological information

Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)-
 ω -(octyloxy)-
 sebacic acid

>2000 mg/kg
Rat - Oral - LD50
 >2000 mg/kg
Rat - Dermal - LD50
 >2000 mg/kg
Rat - Oral - LD50
 >5000 mg/kg
Rat - Oral - LD50
 200 mg/kg
Rabbit - Dermal - LD50
 200 mg/kg

dicyclohexylamine

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name

 butoxyethanol

2-aminoethanol

Result

Rabbit - Skin - Mild irritant
Amount/concentration applied: 500 mg
Rabbit - Skin - Moderate irritant
Amount/concentration applied: 505 mg

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

Serious eye damage/eye irritation

Product/ingredient name

 butoxyethanol

2-aminoethanol

citric acid

Result

Rabbit - Eyes - Moderate irritant
Duration of treatment/exposure: 24 hours
Amount/concentration applied: 100 mg
Rabbit - Eyes - Severe irritant
Amount/concentration applied: 100 mg
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

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

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.

Germ Cell Mutagenicity

Not available.

Section 11. Toxicological information

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Classification

Product/ingredient name	IARC
2-butoxyethanol	3

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
citric acid	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Causes severe burns. May be harmful in contact with skin.
Ingestion	: May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: pain or irritation redness blistering may occur

Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:
stomach pains

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

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)
Additive R01	2679.3	3299.3	N/A	30.3	N/A
2-butoxyethanol	1480	1100	N/A	11	N/A
2-aminoethanol	1720	1100	N/A	11	N/A
neodecanoic acid	500	3640	N/A	N/A	N/A
Fatty acids, castor-oil, polymd.	2500	N/A	N/A	N/A	N/A
2,2',2''-nitrilotriethanol	6400	2500	N/A	N/A	N/A
benzotriazole	500	2500	N/A	N/A	N/A
sebacic acid	N/A	2500	N/A	N/A	N/A
dicyclohexylamine	200	300	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name

2-butoxyethanol

Result

Acute - LC50 - Marine water

Fish - Inland silverside - *Menidia beryllina*

Size: 40 to 100 mm

1250000 µg/l [96 hours]

Effect: Mortality

Acute - LC50 - Marine water

Crustaceans - Common shrimp, sand shrimp - *Crangon*

Section 12. Ecological information

2-aminoethanol	<i>crangon</i>
	800000 µg/l [48 hours]
	Effect: Mortality
	Acute - LC50 - Fresh water
	Fish - Bluegill - <i>Lepomis macrochirus</i>
neodecanoic acid	Size: 40 to 50 mm
	329160 µg/l [96 hours]
	Effect: Mortality
	Chronic - NOEC
	Fish
2-amino-2-methylpropanol	1.2 mg/l [30 days]
	Chronic - NOEC
	Daphnia
	0.85 mg/l [21 days]
	Acute - LC50
2,2',2''-nitrilotriethanol	Fish
	>100 mg/l [96 hours]
	Acute - EC50
	Daphnia
	>100 mg/l [48 hours]
benzotriazole	LC50
	Daphnia
	193 mg/l [48 hours]
	Chronic - NOEC - Fresh water
	Daphnia - Water flea - <i>Daphnia magna</i>
dicyclohexylamine	16 mg/l [21 days]
	Effect: Behavior
	Acute - EC50
	OECD
	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]
	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]

Conclusion/Summary [Product] : Not available.

Persistence/degradability

Not available.

Section 12. Ecological information

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
benzotriazole	-	-	Not readily

Bioaccumulation/Accumulation

Product/ingredient name	LogP _{ow}	BCF	Potential
2-butoxyethanol	0.81	-	Low
2-aminoethanol	-1.31	-	Low
neodecanoic acid	2.1	<225	Low
2-amino-2-methylpropanol	-0.63	-	Low
citric acid	-1.72	-	Low
2,2',2''-nitrilotriethanol	-1	<3.9	Low
2,2'-(methylimino)diethanol	-1.08	-	Low
benzotriazole	1.44	-	Low
sebacic acid	1.5	-	Low
dicyclohexylamine	2.724	-	Low

Mobility in soil

Soil/Water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

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

	China	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-

Section 14. Transport information

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

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

Extinguishing media

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

Unsuitable extinguishing media : None known.

Incompatible materials : No specific data.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

List of Goods banned for Importing

None of the components are listed.

Drug Precursors Requiring an Import/Export License

None of the components are listed.

Inventory of Hazardous Chemicals

Ingredient name	CAS number	Status	Reference number
2-Butoxyethanol	111-76-2	Listed	249
2-Aminoethanol	141-43-5	Listed	33
Dicyclohexylamine	101-83-7	Listed	347

List of Explosive Precursors

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Catalogue and classification of drug precursor chemicals

None of the components are listed.

Inventory of Highly Toxic Articles

None of the components are listed.

Catalogue of Hazardous Chemicals of Priority Management

None of the components are listed.

Catalogue of Occupational Disease Hazard Factors - Dust

None of the components are listed.

Catalogue of Occupational Disease Hazard Factors - Chemical Factors

Ingredient name	Status
ethanolamine	Listed

International regulations

Section 15. Regulatory information

Chemical Weapon Convention List Schedules I, II & III Chemicals

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

China : All components are listed or exempted.

Section 16. Other information

History

Date of printing	: 2026年03月27日
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Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 5	Calculation method
ACUTE TOXICITY (dermal) - Category 5	Calculation method
SKIN CORROSION/IRRITATION - Category 1B	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

📌 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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.