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Ethanolamine (MEA)	30~40%	141-43-5
Diethylene glycol monobutyl ether for synthesis (BDG)	60~70%	112-34-5

Section 4 - First Aid Measures

<p>The First-aid Information :</p> <ul style="list-style-type: none">■ Inhalation :<ol style="list-style-type: none">1. Remove the pollutant, or leave area of exposure to breath fresh air immediately2. If not breathing, provide artificial respiration or oxygen by trained personnel. Avoid providing aid to give mouth-to-mouth resuscitation.3. Get medical attention immediately.■ Skin Contact :<ol style="list-style-type: none">1. Remove contaminated clothing and shoes and wash the affected area with water and soap for more than 15 minutes.2. Seek medical attention immediately if necessary.3. Contaminated clothing and shoes must be thoroughly washed and dried before reuse.■ Eye Contact :<ol style="list-style-type: none">1. Immediately flush eyes with plenty of water for more than 15 minutes.2. Seek medical attention immediately■ Ingestion :<ol style="list-style-type: none">1. Contact the local toxicology center or physician immediately.2. If the patient is unconsciousness, do not induce vomiting or feed anyliquid food.3. If the patient spontaneous vomiting, keeps the patient's head lower than the hip in case of inhaling the vomiting materials.4. If the patient is unconsciousness, turn the patient's head to the right side.5. Refer for medical attention immediately.
<p>The Most Important Symptoms and Hazardous Effects : Persons with pre-existing skin disorders or impaired liver, kidney, and pulmonary function may be more susceptible to the effects of this material.</p>
<p>Protection of First-aiders : Dress C Class protective apparatus and take first aid in a safety area.</p>
<p>Notes to a Physician : If the patient swallow, consider gastric lavage.</p>

Section 5 - Fire Fighting Measures

<p>Extinguishing media : Water spray 、 dry chemical 、 alcohol foam 、 or carbon dioxide.</p>
<p>Specific hazard :</p> <ol style="list-style-type: none">1. The steam will accumulate in the lower-lying areas.2. Airtight container in the fire heat may rupture.
<p>Specific Fire-fighting Procedure :</p> <ol style="list-style-type: none">1. Evacuate to the safety place or protective place to put out of fire.2. Stay in the upwind area to avoid the dangerous vapor and poisonous decomposed substance.3. Before fire fighting, stop the leakage of the substance. If there's no danger and unable to stop leaking, let the fire burn. If fire fighting before stopping the leakage, the vapor and the



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<p>air may generate into the explosive mixture and ignite again.</p> <ol style="list-style-type: none">4. Separate the non-burning substance and protect the staffs.5. If safe to do so, move the undamaged containers from fire area.6. Cool tanks or containers with water spray.7. If the leakage doesn't get burn, use water spray to disperse the vapor and protect the staffs who are attempting to stop leaking.8. Try to evacuate from the fire area and let the fire burn out.9. Away from the storage tank.10. Evacuate immediately if the alarm of the Safety valve starts or changes colors due to fire.11. Wear no special protective equipments personnel are not allowed to enter.
<p>The protection of firefighters: Firefighters must wear full-body chemical protective clothing and self-contained air breathing apparatus (plus flash-resistant aluminum-coated jackets if necessary).</p>

Section 6 - Accidental Release Measures

<p>Personal Precautions :</p> <ol style="list-style-type: none">1. Isolate the disaster area and prohibit the unauthorized members from entering.2. Members should stay at the upper hand area and keep away from the low-lying areas.
<p>Environmental Precautions :</p> <ol style="list-style-type: none">1. Avoid the heat, flame, sparks and other ignition.2. Remove ignition sources.
<p>Methods for Cleaning up :</p> <ol style="list-style-type: none">1. Wash the contaminated materials and area.2. Use liquid as the absorbent to absorb the contaminated material.3. Small spill: Use the sand, Vermiculite or other inert material to absorb the leakage.4. Large spill: Collected by embanking surrounds or digging. Use pump to transfer waste disposal to the tank or specific collector for recycle or manage by disposal sites.

Section 7 - Handling and Storage

<p>Handling :</p> <ol style="list-style-type: none">1. Operate in the well-ventilated place.2. Prevent the materials accumulated at depression or drainage holes.3. Do not enter the confined space.4. Avoid smoking, expose to naked light or ignition sources.5. Avoid not contacting incompatible substances.6. While operating, do not smoke or diet.7. Seal the vessels tightly after the task.8. Avoid making the physics damage of the container.
<p>Precautions :</p> <ol style="list-style-type: none">1. The substance will accumulate per oxidant, which will make damage if volatile, distillation or enrichment processing. High concentrations may build up around container openings, for example.2. When purchasing such peroxidizing substances, make sure they can be used up before they are peroxidized.3. Avoid personal contact, inhalation included.4. Wear personal protective apparatus if situated in over exposed risk.



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<p>5. Wash hands with soaps and water each time finished the work.</p> <p>6. Work suits should be washed separately.</p> <p>7. Keep good professional habits.</p>
<p>Storage :</p> <p>Adequate containers :</p> <p>1. Check the containers if labeled clearly and without leakage.</p> <p>Store incompatible substances :</p> <p>1. In the presence of alkali or alkali salt, temperature increasing may enhance the potential out-of-control reaction.</p> <p>2. Avoid reacting with oxidants.</p> <p>Storage demands:</p> <p>1. Store in the original vessels.</p> <p>2. Keep the vessels sealed tightly.</p> <p>3. Abandon smoking, exposed to naked light, heating sources, or ignition Sources.</p> <p>4. Stored in cool, dry and well ventilated places.</p> <p>5. Store away from incompatible substances and the food containers.</p> <p>6. Avoid physical damage and check the leakage periodically.</p>

Section 8 - Exposure Controls & Personal Protection

<p>Engineering measures :</p> <p>1. When handling small quantities, use local exhaust devices.</p> <p>2. When processing large quantities, the process should be sealed or workers should be isolated.</p> <p>3. Supply sufficient fresh air to supplement the air extracted from the exhaust system.</p>			
Control parameters			
TWA	STEL	Ceiling	Biological standards
--	--	--	--
<p>Personal protective equipment :</p> <ul style="list-style-type: none"> ■ Respiratory Protection : <ol style="list-style-type: none"> 1. If used regularly or exposed to high concentrations, respiratory protection is required. 2. Respiratory protection varies based on minimum to maximum exposure concentrations. 3. Before use, please confirm the warnings and precautions. 4. Use any chemical canister-type respirator containing an organic vapor canister. Or any comprehensive chemical canister-type respiratory protective equipment containing an organic vapor canister. Or any comprehensive air-purifying respiratory protective equipment containing an organic canister. 5. Unknown concentration: Positive pressure self-contained respiratory protective equipment, positive pressure comprehensive air-supplied respiratory protective equipment supplemented by positive pressure self-contained respiratory protective equipment. ■ Hand Protection : Wear impermeable rubber gloves made of butyl rubber, chloroprene rubber, nitrile rubber, Saranex, Viton, 4H. ■ Eye Protection : Wear chemical splash goggles and face shield. Eyewash should be nearby. ■ Skin and Body Protection : Wear appropriate protective clothing, protective boots. Emergency shower should be nearby. 			
<p>Hygiene measures :</p> <p>1. After work, remove the contaminated clothes as quickly as possible. Throw away or wash clothes thoroughly before wearing again. Notify the laundry personnel of the danger of the</p>			



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contaminated clothes.
2. Smoking and eating is strictly prohibited in the work site.
3. Wash hands thoroughly after handling this substance.
4. Keep the work area clean.

Section 9 - Physical & Chemical Properties

Appearance : Liquid. Colorless. Clear	Odor : Ammonia odor. Olfactory Threshold : --
Colour : --	Melting Point:--
pH value : <13	Boiling point/boiling range : 171°C ~180°C
Flammability: --	Flash point : 97°C
Decomposition temp : --	Test method : ASTM D 3828 ; close
Autoignition temp : 204°C	Explosion properties : --
Vapor pressure : --	Vapor density : --
Density : 0.97 (at 25°C)	Solubility : Soluble in cold water.
log Kow : --	Evaporation Rate : --

Section 10 - Stability & Reactivity Data

Stability : Stable
Possible hazardous reactions under specific conditions : 1. Acid (Strong) ,Base (Strong) : incompatible. 2. Oxidants (Strong) : Fire or explosion disaster.
Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Materials to avoid : Acid, Base, Oxidants
Hazardous decomposition products : Heat decomposition will produce Carbon oxides.

Section 11 - Toxicological Information

Route of exposure : Skin, inhalation, ingestion, eyes
Symptoms : Irritation, sore throat, cough, sneezing, headache, nausea, dizziness,drowsiness, loss of consciousness, pulmonary edema, red or rough skin,skim, eyes red and sore, vomiting, diarrhea, seizure, cyanosis, rapidbreathing , tachycardia, low blood pressure, muscle pain, bone marrow suppression, unconsciousness, coma, liver and kidney damage.
Immediate Toxicity : ■ Skin Contact : 1. Direct contact may cause slightly stimulation, and lead to skin red, rough,and skim. 2. Long-term exposed to the substances may cause temporarily uncomfortable. 3. Contact to skin will damage health. If absorbed through skin may cause Systemic effect. 4. If the chemical compounds intrude through open wounds, scratches or wear and tear of the skin into the blood flow, which may result in systemic injury. 5. Check the skin before using the materials and make sure all traumatic metropolises already have appropriate protection.



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<p>■ Inhalation :</p> <ol style="list-style-type: none">1. Because of the low vapor pressure, the material does not have inhalation hazard, if inhaled, it may be irritant to the chest and lungs, and cause coughing, sneezing, headache, sore throat, and even disgusting.2. High concentrations may cause central nervous system suppression, headache, dizziness, dizzy , lethargy, loss of consciousness and pulmonary edema.3. The material may cause by intravascular hemolysis, bone marrow suppression and delayed renal injury.4. The material may cause respiratory irritant to specific people whose body will react to the irritation and damage the lung. <p>■ Ingestion :</p> <ol style="list-style-type: none">1. Ingest the material is harmful to personal health. Ingest the material may cause nausea, vomiting, diarrhea, and Central nervous system inhibition which will lead to headache, dizziness, sleepiness, seizure.2. Ingestion may cause nausea, vomiting, diarrhea and depression of the central nervous system, causing headache, dizziness, drowsiness and convulsions.3. Large amount of intake the material may cause toxic, which lead to kidney damage, and influence the blood flow, thus make cyanosis, rapidly breathing and hear beating, low blood pressure, muscle pain, bone marrow suppression, unconsciousness, coma, even death. <p>■ Eye:</p> <ol style="list-style-type: none">1. May cause irritant, causing red eyes, pain, and transient corneal injury.2. There is evidence shows that the material may be irritated to specific eople, and is harmful after drop into eyes for over 24 hours.3. May cause serious inflammation, corneal injury.4. To the progressive corneal injury, if not timely and properly treated may cause permanent vision damage. <ul style="list-style-type: none">● LD₅₀:--● LC₅₀: --
<p>Specific effects :</p> <ol style="list-style-type: none">1. Excessive and repeat expose to the material may damage the liver and kidney.2. Repeat or long-term expose skin or eyes to the substance may cause dermatitis or conjunctivitis.

Section 12 - Ecological Information

<p>Ecotoxicology :</p> <ul style="list-style-type: none">■ LC₅₀(fish) : --■ EC₅₀(Aquatic Invertebrates) : --■ Bioconcentration factor (BCF) : --
<p>Persistence and degradability :</p> <ul style="list-style-type: none">■ Half-Life (Air) : --■ Half-Life (Water surface) : --■ Half-Life (Groundwater) : --■ Half-Life (Soil) : --
<p>Bioaccumulative potential : --</p>
<p>Mobility in soil : --</p>



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Other adverse effects : --

Section 13 - Disposal Considerations

Methods of disposal :

1. Consult the relevant regulation to deal with.
2. Evaluate the possibility of reduction, re-use, recycling, waste (if all methods do not work). If the material is not used or pollutant, recycle it; if contaminated, recycle it by filtration, distillation or other methods. Check the expiration date and notice that if the properties had been changed, do not recycle it.
3. Do not let washed water or processed equipment to enter drain system.
4. The washed water should be collected and processed and then discard.
5. If want to discharge the discarded materials into the sewer, must follow the relevant laws. If any questions, query the local authority units.
6. Retrieve as much as possible or consult manufacturers, if no suitable processing company, ask the local waste processing unit.
7. Buried or incinerated residual material in qualified places.
8. If possible, recycle the vessels or discard the vessels in qualified landfill.

Section 14 - SDS Transport Information

UN classification number : 2491

Proper D.O.T Shipping Name: --

Hazard Class: 8

Packing Group : --

Marine pollution : --

Specific precautionary transport measures and conditions : --

Section 15 - Regulatory Information

Regulations :

1. Occupational Safety and Health Act
2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals
3. Specific Chemical Substance Control Standards.
4. Standards of Permissible Exposure Limits at Job Site
5. Assessment and Classification Administration of Hazardous Chemicals.
6. Road Traffic Safety Regulations
7. Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste
8. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.

Section 16 - Other Information

Literature references	GHS SDS Database
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