

**SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION-----**

<b>Product Name</b>	Ethanolamine (Monoethanolamine, 2-Aminoethanol)
<b>Product Code(s)</b>	EC6400
<b>Recommended Use</b>	For Laboratory Research Use Only Not for Human or Animal Drug Use

**SECTION 2. ----- HAZARDS IDENTIFICATION -----**

**Emergency Overview**

**Target Organs**

Liver, Heart, Lungs

**WHMIS Classification**

B3	Combustible Liquid	Combustible Liquid
E	Corrosive Material	Moderate respiratory irritant Corrosive to metals Corrosive to skin Corrosive

**GHS Classification**

Flammable liquids (Category 4)  
Acute toxicity, Oral (Category 4)  
Acute toxicity, Inhalation (Category 4)  
Acute toxicity, Dermal (Category 4)  
Skin corrosion/irritation (Sub-category 1B)  
Serious eye damage/eye irritation (Category 1)  
Specific target organ toxicity - single exposure (Category 3), Respiratory system  
Acute aquatic toxicity (Category 2)  
Chronic aquatic toxicity (Category 3)

**GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H227	Combustible liquid.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	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 or doctor/ physician.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403	Store in a well-ventilated place.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

**HMIS Classification**

<b>Health hazard:</b>	3
<b>Chronic Health Hazard:</b>	*
<b>Flammability:</b>	2
<b>Physical hazards:</b>	0

**Potential Health Effects**

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin burns. Causes skin irritation.
<b>Eyes</b>	Causes eye burns. Causes eye irritation.
<b>Ingestion</b>	Harmful if swallowed.

**SECTION 3. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----**

Chemical Name	EC No.	CAS-No	Weight %
Ethanolamine	205-483-3	141-43-5	95-100

**SECTION 4. ----- FIRST-AID MEASURES-----**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**SECTION 5. ----- FIRE FIGHTING MEASURES -----**

**Conditions of flammability**

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)

**Explosion data - sensitivity to mechanical impact**

No data available

**Explosion data - sensitivity to static discharge**

No data available

**Further information**

Use water spray to cool unopened containers.

**SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----**

**Personal precautions**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

**SECTION 7. ----- HANDLING AND STORAGE-----**

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

hygroscopic Handle and store under inert gas.

**SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----**

Components	CAS-No.	Value	Control parameters	Basis
Ethanolamine	141-43-5	TWA	3.000000 ppm	Canada. British Columbia OEL
		STEL	6.000000 ppm	Canada. British Columbia OEL
		TWAEV	3.000000 ppm 7.500000 mg/m3	Canada. Ontario OELs
		STEV	6.000000 ppm 15.000000 mg/m3	Canada. Ontario OELs
		TWA	3.000000 ppm 7.500000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	6.000000 ppm 15.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	3.000000 ppm 7.500000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWA	3 ppm 7.5 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		STEL	6.000000 ppm 15.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		STEL	6 ppm 15 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWAEV	3.000000 ppm 7.500000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWAEV	3 ppm 7.5 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEV	6.000000 ppm 15.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

				values for airborne contaminants
		TWA	3 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	3.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	6 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	6.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

## Personal protective equipment

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

### Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----

### Appearance

Form	liquid, clear
Colour	colourless

### Safety data

pH	12.1 at 100 g/l at 20 °C (68 °F)
Melting point/freezing point	Melting point/range: 10 - 11 °C (50 - 52 °F) - lit.
Boiling point	170 °C (338 °F) - lit. 69 - 70 °C (156 - 158 °F) at 13 hPa (10 mmHg)
Flash point	91 °C (196 °F) - closed cup
Ignition temperature	780 °C (1,436 °F)
Auto-ignition	424 °C (795 °F)

Lower explosion limit	2.5 %(V)
Upper explosion limit	17 %(V)
Vapour pressure	0.3 hPa (0.2 mmHg) at 20 °C (68 °F)
Density	1.012 g/mL at 25 °C (77 °F)
Water solubility	1,000 g/l at 20 °C (68 °F) - completely miscible
Partition coefficient: n-octanol/water	log Pow: -2.299 at 25 °C (77 °F)
Relative vapour density	2.11 - (Air = 1.0)
Odour	amine-like
Odour Threshold	No data available
Evaporation rate	No data available

## SECTION 10. -----STABILITY AND REACTIVITY -----

### Chemical stability

Absorbs carbon dioxide (CO<sub>2</sub>) from air. Stable under recommended storage conditions.

### Possibility of hazardous reactions

No data available

### Conditions to avoid

Exposure to moisture  
Heat, flames and sparks.

### Materials to avoid

Strong acids and oxidizing agents, Iron, Copper, Brass, Rubber

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>) Other decomposition products - No data available

## SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

### Acute toxicity

#### Oral LD50

LD50 Oral - Rat - male and female - 1,089 mg/kg

#### Inhalation LC50

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

#### Dermal LD50

LD50 Dermal - Rabbit - 1,015 mg/kg

#### Other information on acute toxicity

No data available

### Skin corrosion/irritation

Skin - Rabbit - Causes burns. - OECD Test Guideline 404

### Serious eye damage/eye irritation

Eyes - Rabbit - Corrosive - OECD Test Guideline 405

### Respiratory or skin sensitisation

No data available

Genotoxicity in vitro - Ames test - Salmonella typhimurium - negative

Genotoxicity in vivo - Mouse - male and female - Gavage - negative

### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### **Reproductive toxicity**

No data available

### **Teratogenicity**

No data available

### **Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

### **Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

### **Aspiration hazard**

No data available

### **Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin burns. Causes skin irritation.
<b>Eyes</b>	Causes eye burns. Causes eye irritation.

### **Signs and Symptoms of Exposure**

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### **Synergistic effects**

No data available

### **Additional Information**

RTECS: KJ5775000

## **SECTION 12. ----- ECOLOGICAL INFORMATION -----**

### **Toxicity**

Toxicity to fish	semi-static test LC50 - Cyprinus carpio (Carp) - 150 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 65 mg/l - 48 h
Toxicity to algae	static test EC50 - Selenastrum capricornutum (green algae) - 2.8 mg/l - 72 h Method: OECD Test Guideline 201
Toxicity to bacteria	EC50 - Pseudomonas putida - 110 mg/l - 17 h Method: DIN 38 412 Part 8

Biodegradability aerobic  
Result: > 70 % - Readily biodegradable  
Method: OECD Test Guideline 301F

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**PBT and vPvB assessment**

No data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**DOT (US)**

UN number: 2491 Class: 8 Packing group: III  
Proper shipping name: Ethanolamine  
Reportable Quantity (RQ):  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 2491 Class: 8 Packing group: III EMS-No: F-A, S-B  
Proper shipping name: ETHANOLAMINE  
Marine pollutant: No

**IATA**

UN number: 2491 Class: 8 Packing group: III  
Proper shipping name: Ethanolamine

**SECTION 15. ----- REGULATORY INFORMATION -----**

**WHMIS Classification**

B3	Combustible Liquid	Combustible Liquid
E	Corrosive Material	Moderate respiratory irritant
		Corrosive to metals
		Corrosive to skin
		Corrosive

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.



**SECTION 10. ----- OTHER INFORMATION -----**

**Issuing Date** 09-Feb-2009  
**Revision Date** 02-Aug-2017  
**Revision Note** No information available.  
**Recommended Restrictions** No information available

**Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of SDS**