



5515 North Service Rd. #306
Burlington, Ontario L7L 6G4

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megaloid.ca



1. PRODUCT IDENTIFICATION

Name: *Monoethanolamine*

Synonyms: *2-hydroxyethylamine, 2-amino-1-ethanol, 1-amino-2-hydroxyethanol, 2-aminoethanol, MEA*

CAS# 141-43-5

Product Uses: agricultural chemicals, cleaners, polishes, cosmetics, corrosion inhibitor, H₂S removal from natural gas

Supplier *Megaloid Laboratories Limited*
Identifier: *5515 North Service Road, Suite 306
Burlington, Ontario, Canada
L7L 6G4
Phone: 905-337-7411 / Fax: 905-337-1686*

EMERGENCY INFORMATION Call CHEMTREC - (800) 424-9300

2. HAZARDS

GHS Class <i>(category)</i>	Flammable <i>(4)</i>	Acute oral <i>(4)</i>	Acute skin <i>(4)</i>	Acute inhalation <i>(4)</i>	Skin corrosive <i>(1)</i>	STOT <i>(3)</i>
Signal Word	DANGER					
Hazard Statements	<i>combustible liquid (H225)</i>	<i>Harmful if swallowed (H302)</i>	<i>Harmful in contact with skin (312)</i>	<i>Harmful if inhaled (H332)</i>	<i>Causes severe skin burns & eye damage (H314)</i>	<i>May cause respiratory irritation (H335)</i>



Label Pictograms

GHS Precautionary Statements for Labelling

Prevention

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P261 Avoid breathing vapours.

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear eye protection, protective gloves and clothing of butyl rubber
Response	
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 or shower.
P304, P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305, P351, P338	IF IN EYES: rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
P370, P378	IN CASE OF FIRE: use alcohol-resistant foam to extinguish.
Storage	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
Disposal	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
<i>Monoethanolamine</i>	<i>141-43-5</i>	<i>>99</i>	<i>EC # 205-483-3</i>
<i>Diethanolamine</i>	<i>111-42-2</i>	<i>0.1 – 0.4</i>	<i>EC # 203-868-0</i>

4. FIRST AID

Inhalation

Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.

Skin Contact

Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

Eye Contact

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.

Ingestion

Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

First-aid Comments

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. FIRE FIGHTING & FLAMMABILITY

Extinguishing Media

Suitable Extinguishing Media

Foam, dry chemical, water fog, water spray.

Unsuitable extinguishing media:

High pressure water streams may scatter hot liquid. Violent steam generation or eruption may occur upon application of direct water stream to hot product.

Combustion Products

Combustion products may include toxic nitrogen oxide, hydrogen cyanide, formaldehyde carbon monoxide, carbon dioxide and ammonia gases. Vapor is heavier than air and can accumulate in confined spaces and low areas. Heat from a fire can cause a rapid build-up of pressure inside containers, which may cause explosive rupture. Cannot accumulate a static charge on agitation or pumping.

Special Protective Equipment and Precautions for Fire-fighters

Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

6. ACCIDENTAL RELEASE MEASURES

Serious Fire Potential:

blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof.

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Prevent material from contaminating soil and from entering sewers or waterways.

Methods and Materials for Containment and Cleaning Up

*Leak Precaution: dyke to control spillage and prevent environmental contamination
Handling Spill: Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal.*

Other Information

Report spills to local health, safety and environmental authorities, as required.

7. HANDLING & STORAGE

Precautions for Safe Handling

Wear personal protective gloves, clothing and other equipment required for the workplace.

Do not breathe fume/gas/mist/vapors/spray.

Avoid generating airborne fumes/vapors/mist from this product.

Handle this product with adequate ventilation.

Wash exposed skin thoroughly, immediately after exposure to product and at the end of the work-shift.

Do not eat or drink when using this product.

Keep away from flames and hot surfaces. – No smoking.

Contaminated work clothing should not be allowed out of the workplace.

Prevent handling with incompatible materials such as brass, strong acids and oxidizing agents. Prevent release of this material to the environment; prevent spills and keep away from drains. Never perform any welding, cutting, soldering, drilling or other hot work on an empty vessel, container or piping until all liquid and vapors have been cleared. Inspect containers for leaks before handling. Prevent damage to containers. Keep containers closed when not in use. Assume that empty containers contain residues which are hazardous.

Conditions for Safe Storage

Keep containers tightly closed when not in use. Store in a cool, dry and well-ventilated place. Store away from sunlight, heat and ignition sources. Keep storage area away from work areas. Store away from strong oxidants, strong acids and other incompatible materials (see Section 10). Do not store in containers made of carbon steel, aluminum, aluminum alloys, copper, brass or other copper alloys. Keep containers tightly closed. Store separated from food and feedstuffs.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWA EV	3ppm / 7.5mg/m ³	Ontario STEV	6ppm / 15mg/m ³
ACGIH TLV	3ppm / 7.5mg/m ³	ACGIH STEL	6ppm / 15mg/m ³
OSHA PEL	3ppm / 7.5mg/m ³	OSHA STEL	6ppm / 15mg/m ³

Ventilation	Mechanical ventilation may be required to control airborne vapour or mist to regulated limits; a respirator with organic vapour cartridge should be available for escape, (store respirators in airtight containers).
Hands	Nitrile or "Viton" gloves recommended
Eyes	Safety glasses with side shields – always protect the eyes
Clothing	Wear impermeable (above) apron, boots, & long sleeves if there is any danger of splashing.

Appropriate Engineering Controls

Exposure control measures: Facilities utilizing or storing this material should be equipped with general or local exhaust ventilation, eyewash facilities and a safety shower. Ventilation system should be made of corrosion-resistant material.

Maintain air concentrations below occupational exposure standards using engineering controls. Personal Protective Equipment (PPE) should be used as back-up protection to engineering controls.

9. PHYSICAL PROPERTIES

Appearance	Colourless. Absorbs moisture from the air. Yellows on exposure to air, ultraviolet or heat, darkening to brown in time
Odour	Ammonia-like
Odour threshold	~ 40 ppm (98 mg/m ³)
pH	11.7 (6% solution)
Melting Point/Freezing Point	10.5 °C (50.9 °F) (freezing)
Initial Boiling Point/Range	171 °C (340 °F)
Flash Point	86 °C (187 °F) (closed cup)
Evaporation Rate	Not Available

Flammability (Solid, Gas)	<i>Not Available</i>
Upper/Lower Flammability or Explosive Limit	<i>23.5% (upper); 3% (lower)</i>
Vapour Pressure	<i>0.4 mm Hg</i>
Vapour Density (air = 1)	<i>2.1</i>
Relative Density (water = 1)	<i>1.018 at 20 °C (68 °F)</i>
Solubility	<i>Soluble in water; common organic solvents.</i>
Partition Coefficient, n-Octanol/Water (Log Kow)	<i>Not Available</i>
Auto-ignition Temperature	<i>410 °C (770 °F)</i>
Conversion Factor	<i>1 ppm – 2.49 mg/m³</i>
Viscosity	<i>2.4 centipoise (20°C / 68°F)</i>
Physical State	<i>Liquid</i>
Molecular Weight	<i>61 grams per mole</i>
Molecular Formula	<i>C₂H₇N₀</i>

10. REACTIVITY

Dangerously Reactive *with strong oxidising agents.*

Also Reactive *with acids or alkalis lowers decomposition temperature (below); CO₂ to form unstable carbamates*

Chemical Stability

Stable; will not polymerize

Decomposes in Presence of *high temperatures (above 200°C / 390°F) and contact with sources of ignition. Avoid exposing product to air, light and moisture. Avoid direct sunlight.*

Decomposition Products

May include nitrogen oxides, ammonia, irritating aldehydes and ketones. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.

Mechanical Impact

No

11. TOXICITY

Prolonged exposure to vapour/mist can cause bronchitis; prolonged or repeated exposure to low concentrations may cause dermatitis & skin cracking.

Acute Toxicity	
LD₅₀ (oral)	<i>1515-1725, 1970, 2140-2740, 3320mg/kg (rat), 700-1475mg/kg (mouse), 620 & 820mg/kg (guinea pig), 1000mg/kg (rabbit)</i>

LD50 (skin) 1025mg/kg (rabbit)

LC50 (inhalation) >1212ppm (mouse)

Skin Corrosion/Irritation

Severely irritating skin; may be corrosive if contact is prolonged.

Serious Eye Damage/Irritation

Corrosive; may cause permanent damage.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Vapour/mist likely to be irritating; may cause laboured breathing, wheezing & pulmonary edema; symptoms may only develop after 24 hours or longer

Skin Absorption

Some skin absorption; no toxic effects likely by this route.

Ingestion

Corrosive; burns mouth, throat, stomach pain; vomiting – not a route of industrial exposure

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Do not breathe vapours. If inhaled remove person to fresh air and keep comfortable for breathing.

Respiratory and/or Skin Sensitization

Not a sensitizer in humans or animals.

Carcinogenicity

Not a carcinogen. IARC: Not specifically designated. ACGIH®: Not specifically designated. NTP: Not specifically listed. OSHA: Not specifically designated.

Reproductive Toxicity

Development of Offspring

No known effect in humans or animals.

Germ Cell Mutagenicity

No known effect on humans or animals.

12. ECOLOGICAL INFORMATION

Bioaccumulation Persistence and Degradability	<i>highly water soluble & readily metabolised, so cannot bioaccumulate</i> Biodegradation - <i>biodegrades rapidly in the presence of oxygen: 97% in 4 days, 62% & 92% in 28 days, 80% in 19 days, 80-90% in 26 days. 90% in 21 days & others</i> Abiotic Degradation - <i>reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 10.5, 11 hours & 27hours</i>
Mobility in soil, water	<i>water soluble; mobile in soil & water; but expected to become a cation & may adsorb strongly to soil</i>
Aquatic Toxicity	
LC50 (Fish, 96hr)	<i>170 & 190mg/litre (Carassius auratus), 337mg/litre (Gambusia affinis), 349mg/litre (Cyprinus carpio), 227 & 2070mg/litre (Pimephales promelas); 3680 & >5000mg/litre (Brachydanio rerio), 330mg/litre (Lepomis macrochirus), 150mg/litre (Oncorhynchus mykiss)</i>
EC50 (Crustacea, 48hr)	<i>33, 65 & 97mg/litre (Daphnia magna), 120 & 140mg/litre (Daphnia magna, 24hr)</i>

EC50 (Algae)	2.8mg/litre (<i>Pseudokirchnerella subcapitata</i>), 24.7mg/litre (<i>Phaeodactylum tricornutum</i>), 15mg/litre (<i>Scenedesmus subspicatus</i>), 70mg/litre (“other algae”)
EC50 (Bacteria)	110mg/litre (<i>Pseudomonas putida</i>), 13.7mg/litre (<i>Photobacterium phosphoreum</i>)
EC10 (Bacteria)	>1000mg/litre (sewage sludge)

13. DISPOSAL

Water Disposal

Do not flush to sewer, recycle if possible, local regulations may permit disposal in sanitary landfill; may be incinerated in approved facility

Containers

Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.


Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs).

Steel containers must be inspected, pressure tested & recertified every 5 years.

Never cut, drill, weld or grind on or near this container, even if empty

14. TRANSPORT CLASSIFICATION

Canada TDG	PIN	UN2491	
AND	Shipping Name	Ethanolamine	
U.S.A. 49 CFR	Class & Packing Group	8, PG III	

Marine Pollutant	Not a Marine Pollutant
ERAP Required	NO
Reportable Quantity	100lbs(45.4kg)
E R G No.	153

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

15. REGULATIONS

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

Canadian Regulations

CEPA - National Pollutant Release Inventory (NPRI)

Not specifically listed.

U.S.A. Regulations

Immediately Dangerous to Life or Health: 30 ppm

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 3 ppm (6 mg/cu m). Vacated 1989 OSHA PEL TWA 3 ppm (8 mg/cu m); STEL 6 ppm (15 mg/cu m) is still enforced in some states.

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 3 ppm (8 mg/cu m).

Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 6 ppm (15 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 3 ppm; 15 min Short Term Exposure Limit (STEL): 6 ppm.

Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non-air quality health and environmental impact and energy requirements. Ethanolamines are produced, as an intermediate or a final product, by process units covered under this subpart. /Ethanolamines

FIFRA Requirements: As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA '88 were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D pesticides of less concern. 2-Aminoethanol is found on List D. Case No: 4032; Pesticide type: Fungicide, antimicrobial; Case Status: No products containing the pesticide are actively registered. Therefore, we are characterizing the case as "cancelled." Under FIFRA, pesticide producers may voluntarily cancel their registered products. EPA also may cancel pesticide registrations if registrants fail to pay required fees or make/meet certain reregistration commitments, or if EPA reaches findings of unreasonable adverse effects.; Active ingredient (AI): 2-Aminoethanol; AI Status: The active ingredient is no longer contained in any registered products. Thus, we characterize it as "cancelled." Active Ingredients with Recent Production Pending Cancellation of all Products for Non-payment of 1990 Registration Fees: Ethanolamine (CAS 141-43-5). Use: disinfectant/antimicrobial uses. Year last produced: 1989. Registration N. 058018-00001. Product Name: Pro Way Brand Realclean Spray Concentrate. /From Table 2

FDA Requirements: Ethanolamine is an indirect food additive for use only as a component of adhesives.

Other international inventories

- Australia: All substances are present on the Inventory of Chemical Substances (AICS).
China: All substances are present on the Chinese inventory (IECSC).
Japan: All substances are present on ENCS; Ethanolamine (2)-301.
Korea: All substances are present on the Inventory of Existing and Evaluated Chemical Substances; Ethanolamine KE-20493.
Mexico: All substances are present on the inventory (INSQ).
New Zealand: All substances are present on the inventory (NZIoC) HSNO Approval: HSR002962.
Philippines: All substances are present on the inventory (PICCS).
Turkey: All substances are present on the inventory. EC# 205-483-3.

16. OTHER INFORMATION

NFPA RATING	Health 3	Flammability 2	Instability 0
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Prepared for Megaloid Laboratories Limited by Richard Koscher
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Key to Abbreviations	<p>ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances</p>
References	<p>CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).</p>
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