

# Material Safety Data Sheet

## Ethylene oxide, 99+ %

ACC# 52164

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ethylene oxide, 99+%

**Catalog Numbers:** AC410020000, AC410021000

**Synonyms:**

**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
75-21-8	Ethylene oxide	>99	200-849-9

**Hazard Symbols:** T F+

**Risk Phrases:** 12 23 36/37/38 45 46

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

**Appearance:** colorless. **Flash Point:** -20 deg C. **Danger!** Cancer hazard. Flammable gas. Reproductive hazard.

**Target Organs:** Lungs, reproductive system.

**Potential Health Effects** The toxicological properties of this material have not been investigated. Use appropriate procedures to prevent opportunities for direct contact with the skin or eyes and to prevent inhalation.

### Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** Use agent most appropriate to extinguish fire.

**Flash Point:** -20 deg C ( -4.00 deg F)

**Autoignition Temperature:** 429 deg C ( 804.20 deg F)

**Explosion Limits, Lower:**3.0%

**Upper:** 100%

**NFPA Rating:** (estimated) Health: 3; Flammability: 4; Instability: 3

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section.

### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

**Storage:** Store in a cool, dry place. Keep container closed when not in use. Refrigerator/flammables.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels. See 29CFR 1910.1047 for regulations applying to all occupational exposures to ethylene oxide.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylene oxide	1 ppm TWA	0.1 ppm TWA; 0.18 mg/m <sup>3</sup> TWA 800 ppm IDLH	1 ppm TWA PEL; 0.5 ppm TWA action level; 5 ppm excursion limit (15 min); Cancer hazard and reproductive hazard (

**OSHA Vacated PELs:** Ethylene oxide: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear chemical goggles.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Gas

**Appearance:** colorless

**Odor:** Not available.

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:**Not available.

**Viscosity:** Not available.

**Boiling Point:** 11 deg C

**Freezing/Melting Point:**0 deg C

**Decomposition Temperature:**Not available.

**Solubility:** Not available.

**Specific Gravity/Density:**.8700g/cm<sup>3</sup>

**Molecular Formula:**C<sub>2</sub>H<sub>4</sub>O

**Molecular Weight:**44.04

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials, strong oxidants.

**Incompatibilities with Other Materials:** Not available.

**Hazardous Decomposition Products:** Irritating and toxic fumes and gases.

**Hazardous Polymerization:** Not available.

## Section 11 - Toxicological Information

### RTECS#:

**CAS#** 75-21-8: KX2450000

### LD50/LC50:

CAS# 75-21-8:

Draize test, rabbit, eye: 18 mg/6H Moderate;

Inhalation, mouse: LC50 = 836 ppm/4H;

Inhalation, rat: LC50 = 800 ppm/4H;

Oral, rat: LD50 = 72 mg/kg;

### Carcinogenicity:

CAS# 75-21-8:

**ACGIH:** A2 - Suspected Human Carcinogen

**California:** carcinogen; initial date 7/1/87

**NIOSH:** potential occupational carcinogen

**NTP:** Known carcinogen

**OSHA:** Select carcinogen

**IARC:** Group 1 carcinogen

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** CAS# 75-21-8: waste number U115 (Ignitable waste, Toxic waste).

## Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	ETHYLENE OXIDE				No information available.
<b>Hazard Class:</b>	2.3				
<b>UN Number:</b>	UN1040				
<b>Packing Group:</b>					

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 75-21-8 is listed on the TSCA inventory.

#### Health & Safety Reporting List

CAS# 75-21-8: Effective Date: 10/4/82; Sunset Date: 10/4/92

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### SARA

#### CERCLA Hazardous Substances and corresponding RQs

CAS# 75-21-8: 10 lb final RQ; 4.54 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

CAS# 75-21-8: 1,000 lb TPQ

#### SARA Codes

CAS # 75-21-8: acute, chronic, flammable, reactive.

#### Section 313

This material contains Ethylene oxide (CAS# 75-21-8, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

CAS# 75-21-8 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 75-21-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:** WARNING: This product contains Ethylene oxide, a chemical known to the state of California to cause cancer. WARNING: This product contains Ethylene oxide, a chemical known to the state of California to cause birth defects or other reproductive harm. California No Significant Risk Level: CAS# 75-21-8: 2 ug/day NSRL

### European/International Regulations

#### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

T F+

#### Risk Phrases:

R 12 Extremely flammable.

R 23 Toxic by inhalation.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 45 May cause cancer.

R 46 May cause heritable genetic damage.

#### Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

#### WGK (Water Danger/Protection)

CAS# 75-21-8: 2

#### Canada - DSL/NDSL

CAS# 75-21-8 is listed on Canada's DSL List.

#### Canada - WHMIS

WHMIS: Not available.

**Canadian Ingredient Disclosure List**

CAS# 75-21-8 is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits**

CAS# 75-21-8: OEL-ARAB Republic of Egypt:TWA 10 ppm (20 mg/m<sup>3</sup>) OEL-AUSTRALIA:TWA 1 ppm (2 mg/m<sup>3</sup>);Carcinogen JAN9 OEL-BELGIUM:TWA 1 ppm (1.8 mg/m<sup>3</sup>);Carcinogen JAN9 OEL-CZECHOSLOVAKIA:TWA 1 mg/m<sup>3</sup>;STEL 5 mg/m<sup>3</sup> OEL-DENMARK:TWA 1 ppm (1.8 mg/m<sup>3</sup>);Carcinogen JAN9 OEL-FINLAND:TWA 1 ppm (2.8 mg/m<sup>3</sup>);Carcinogen JAN9 OEL-FRANCE:TWA 5 ppm (10 mg/m<sup>3</sup>);STEL 10 ppm (20 mg/m<sup>3</sup>);CAR OEL-GERMANY;Skin;Carcinogen OEL-HUNGARY:STEL 1 mg/m<sup>3</sup>;Carcinogen OEL-JAPAN:TWA 50 ppm (90 mg/m<sup>3</sup>);Carcinogen OEL-THE NETHERLANDS:TWA 50 ppm (90 mg/m<sup>3</sup>) OEL-THE PHILIPPINES:TWA 50 ppm (90 mg/m<sup>3</sup>) OEL-POLAND:TWA 1 mg/m<sup>3</sup> OEL-RUSSIA:TWA 50 ppm;STEL 1 mg/m<sup>3</sup> OEL-SWEDEN:TWA 1 ppm (2 mg/m<sup>3</sup>);STEL 5 ppm (9 mg/m<sup>3</sup>);Skin;CAR OEL-SWITZERLAND:TWA 1 ppm (2 mg/m<sup>3</sup>).;Skin;Carcinogen OEL-TURKEY:TWA 50 ppm (90 mg/m<sup>3</sup>) OEL-UNITED KINGDOM:TWA 5 ppm (10 mg/m<sup>3</sup>) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**Section 16 - Additional Information**

**MSDS Creation Date:** 4/05/1997

**Revision #2 Date:** 12/16/2002

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