

1. Product and Company Identification

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Product Name Ethylene Oxide
Part Number RXSOL-60-1112-030

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Product name	Cas No	EC No	Weight	Formula
Ethylene oxide	75-21-8	200-849-9	44,05 g/mol	C ₂ H ₄ O

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H220 Extremely flammable gas. H230 May react explosively even in the absence of air. H280 Contains gas under pressure; may explode if heated. H301 + H331 Toxic if swallowed or if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H340 May cause genetic defects. H350 May cause cancer. H360FD May damage fertility. May damage the unborn child. H372 Causes damage to organs (Nervous system) through prolonged or repeated exposure.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P260 Do not breathe gas. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. 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/ doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P410 + P403 Protect from sunlight. Store in a well-ventilated place
Classification of the substance or mixture	No data available
Supplemental Hazard Statements	No data available
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

4. First Aid Measures

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General advice	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
If inhaled	After inhalation fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
Eye Contact	After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
Swallowed	If swallowed give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.
Skin Contact	In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
Inhalation	No data available
Ingestion	No data available
Most important symptoms and effects, both acute and delay	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

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Flammability	No data available
Suitable extinguishing media	Water Foam Carbon dioxide (CO ₂) Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Carbon oxides Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire.
Further information	Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Hazardous combustion products	No data available
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Protective Equipment	No data available
Specific Hazards Arising from the Chemical	No data available

6. Accidental Release Measures

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Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe gas. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Spillage	No data available
Personal Protection	No data available
Environmental Precaution	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning	No data available
Reference to other sections	For disposal see section 13.

7. Handling and Storage

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Advice on protection against fire and explosion	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	No data available
Hygiene measures	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Advice on safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Conditions for safe storage including any incompatibilities	No data available
Storage conditions	Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Keep away from combustible materials and sources of ignition. Recommended storage temperature 2 - 8 °C
Storage class	Storage class (TRGS 510): 2A: Gases
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
Advice on general occupational hygiene	No data available

8. Exposure controls and personal protection

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Exposure controls	Personal protective equipment
Engineering Control	No data available
Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Body Protection	Flame retardant antistatic protective clothing.
Skin protection	No data available
Respiratory protection	Required when vapours/mists are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Other Protection Measure	No data available

9. Physical and chemical properties

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Physical state	Liquefied gas
Colour	Colorless
Odour	Ethereal, fruity
Odor Threshold	No data available
pH	7,0 at 20 °C
Melting Point	-111 °C - lit.
Boiling Point	10,7 °C - lit.
Flash Point	-20,0 °C - closed cup
Evaporation Rate	No data available
Flammability (solid, gas)	Chemically unstable at 20 °C temperature and a standard pressure of 101.3 kPa
Explosive limits	No data Available
Upper/lower flammability or explosive limits	Upper explosion limit 99 %(V) Lower explosion limit 3 %(V)
Autoignition temperature	429,0 °C at 1.013 hPa

Decomposition temperature	No data available
Vapour pressure	1.456 hPa at 20 °C
Viscosity	No data available
Density	0,882 g/cm ³ at 25 °C - lit.
Relative Density	1,950 at 0 °C
Specific Gravity	No data available
Partition coefficient	log Pow: -0,3 at 25 °C - Bioaccumulation is not expected.
Explosive properties	No data available
Solubility	at 20 °C miscible in all proportions
Ignition temperature	No data available
Particle characteristics	No data available

10. Stability and reactivity

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Reactivity	No data available
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature)
Possibility of hazardous reactions	Violent reactions possible with: Oxidizing agents Alcohols Alkali metals Ammonia
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

11. Toxicological information

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Acute toxicity	LD50 Oral - Rat - 72,0 mg/kg Remarks: (RTECS) Acute toxicity estimate Oral - 72 mg/kg (Calculation method) LC50 Inhalation - Rat - male and female - 4 h - 2,76 mg/l - vapor (OECD Test Guideline 403) Acute toxicity estimate Inhalation - 2,76 mg/l - vapor (Calculation method)
Skin corrosion/irritation	Skin - Rabbit Result: Causes burns. Remarks: (ECHA) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitization	Maximization Test - Guinea pig negative (OECD Test Guideline 406) (in analogy to similar products) The value is given in analogy to the following substances: Methanol
Carcinogenicity	Presumed to have carcinogenic potential for humans
Germ cell mutagenicity	May cause genetic defects.
Reproductive toxicity	May damage the unborn child. May damage fertility.
Specific target organ toxicity - single exposure	Inhalation - May cause respiratory irritation. - Respiratory system Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) May cause drowsiness or dizziness. - Nervous system Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Additional Information	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. RTECS: KX2450000 burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to large amounts can cause:, Convulsions To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

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Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: 96 % - Readily biodegradable. (OECD Test Guideline 301C)
Toxicity to fish	Static test LC50 - Pimephales promelas (fathead minnow) - 84 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	Static test LC50 - Daphnia magna (Water flea) - 212 mg/l - 48 h (US-EPA)
Toxicity	No data available
Toxicity to bacteria	Static test EC50 - activated sludge - > 713 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata - 240 mg/l - 96 h (US-EPA)
Bioaccumulation potential	Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

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Product	Pressurised gas bottle: dispose of only in empty condition!
Contaminated packaging	No data available
Waste treatment Method	No data available

14. Transport information

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UN number	ADR/RID:1040	IMDG:1040	IATA:1040
UN proper shipping name	ADR/RID:ETHYLENE OXIDE	IMDG:ETHYLENE OXIDE	IATA:ETHYLENE OXIDE
Transport hazard class(es)	ADR/RID:2.3 (2.1)	IMDG:2.3 (2.1)	IATA:2.3 (2.1)
Packaging group	ADR/RID:-	IMDG:-	IATA:-
Environmental hazards	ADR/RID:No	IMDG:No	IATA:No
Special precautions for user	Tunnel restriction code (B/D)		
Further information	No data available		

15. Regulatory information

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Safety, health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Other regulations	Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work
Chemical Safety Assessment	A Chemical Safety Assessment was not carried out for this substance.

16. Other information

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Other Information	The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied,
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