



SAFETY DATA SHEET EM211/EOEOEA REVISION 4, DATE 03 AUG 20

1. IDENTIFICATION

Product Name	EM211/EOEOEA
Other Names	2-(2-Ethoxyethoxy) Ethyl Acrylate; 2-(2-Ethoxyethoxy)ethyl 2-propenoate; 2-(2-Ethoxyethyl)ethyl acrylate
Uses	UV Coatings; Inks; Adhesives; Photoresists.
Chemical Family	No Data Available
Chemical Formula	C ₉ H ₁₆ O ₄
Chemical Name	2-Propenoic acid, 2-(2-ethoxyethoxy)-, ethyl ester
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887


2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled



Globally Harmonised System

Hazard Classification		Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories		Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 2A Sensitisation (Skin) - Category 1 Specific Target Organ Toxicity (Single Exposure) - Category 3	
Pictograms			
Signal Word		Warning	
Hazard Statements		H315 H317 H319 H335	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation.
Precautionary Statements	Prevention	P280	Wear protective gloves/eye protection/face protection.
		P272	Contaminated work clothing should not be allowed out of the workplace.
		P271	Use only outdoors or in a well-ventilated area.
	Response	P261	Avoid breathing mist/vapours/spray.
		P302 + P352	IF ON SKIN: Wash with plenty of water.
		P337 + P313	If eye irritation persists: Get medical advice.
		P333 + P313	If skin irritation or rash occurs: Get medical advice.
		P312	Call a POISON CENTER or doctor if you feel unwell.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
	Storage	P362 + P364	Take off contaminated clothing and wash it before reuse.
		P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
	Disposal	P405	Store locked up.
		P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1E	Substances that are acutely toxic –May be harmful, Aspiration hazard
		6.3A	Substances that are irritating to the skin
		6.4A	Substances that are irritating to the eye

6.5B

Substances that are contact sensitisers

3. COMPOSITION/INFORMATION ON INGREDIENTS*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
2-(2-Ethoxyethoxy)ethyl acrylate	C9H16O4	7328-17-8	<=100 %

4. FIRST AID MEASURES*Description of necessary measures according to routes of exposure*

Swallowed	IF SWALLOWED: Rinse mouth, then give (lukewarm) water to drink. Do not induce vomiting. Get immediate medical advice/attention if a large quantity is swallowed or if you feel unwell. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with clean running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 20 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of mild soap and (lukewarm) water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician for advice. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	May cause an allergic skin reaction.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Combustible liquid; May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction.
Fire and Explosion Hazard	High temperatures, inhibitor depletion, accidental impurities or exposure to radiation or oxidisers may cause spontaneous polymerising reaction, generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.
Hazardous Products of Combustion	Fire will produce irritating and/or toxic gases, including acrid smoke, Carbon monoxide, Carbon dioxide, aldehydes, organic acids.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	113 °C [Closed cup]
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available

Hazchem Code

No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Pick up with sand or other non-combustible absorbent material and place into containers for later disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Dike far ahead of large spill for later disposal.
Decontamination	No information available.
Environmental Precautionary Measures	Prevent entry into drains and waterways.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	<p>Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use local exhaust ventilation and closed processing system. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid high temperatures and keep away from ignition sources - No smoking.</p> <p>*If material freezes, heat and mix to redistribute the inhibitor; Product may also be heated to facilitate handling. Heat product container slowly to 40 °C for not more than 24 hours. Convection ovens or warm water bath (preferred due to more efficient heat transfer) are recommended for heating - Do not use localised heat sources (e.g. drum or band heaters). An air space, preferably an air bubble flow, should be provided for at all times during heating.</p>
Storage	<p>Store, above 10 °C and below 32 °C, in a dry and well-ventilated place. Protect from direct sunlight/UV radiation. Prevent material from freezing (inhibitor can separate from product as a solid). Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials and other initiators (see SECTION 10). Use product within six months of receipt for optimum results. Store locked up.</p> <p>*Bulk storage temperature range: 15 - 27 °C</p>
Container	<p>Keep in the original container. Maintain head space in storage containers to support oxygen requirements of the inhibitor (s). Do not blanket or mix with oxygen free (inert) gas.</p> <p>*This product is inhibited to prevent uncontrolled polymerisation. A polymerisation reaction can generate heat and pressure and may cause product container to rupture. Check inhibitor content often and add inhibitor to bulk liquid if needed.</p>

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	<p>A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.</p> <p>*Use explosion-proof electrical/ventilating/lighting equipment.</p>
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection if handling this material at elevated temperatures or under mist forming conditions. Recommended: Organic vapour/particulate (A-P) filter respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical splash goggles; Face-shield in case of possible splashing or spraying, airborne particles/vapours. Contact lenses should NOT be worn.
 - Hand protection: Wear protective gloves. Recommended: Nitrile gloves (suitable for product without solvents added); Thick (>0.5 mm) nitrile gloves (suitable for product used with solvents). Do NOT use natural rubber gloves.
 - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Apron, boots, head and face protection, depending on the conditions of use.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Mild, musty
Colour	Clear
pH	6.8 - 7.2
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	241 °C
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Slightly soluble in water - Soluble in acetone
Specific Gravity	1.01 - 1.03
Flash Point	113 °C [Closed cup]
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.01 - 1.03 g/cm3
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.

Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Combustible liquid; May burn but does not ignite readily.
Reactions That Release Gases or Vapours	Fire will produce irritating and/or toxic gases, including acrid smoke, Carbon monoxide, Carbon dioxide, aldehydes, organic acids.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	This product is inhibited to prevent uncontrolled polymerisation.
Chemical Stability	Stable on normal condition.
Conditions to Avoid	Avoid high temperatures, localised heating and sources of ignition. Protect from direct sunlight/UV radiation. Prevent material from freezing. Avoid oxidising conditions and inert gas blanketing.
Materials to Avoid	Incompatible/reactive with strong oxidisers, strong reducers, free radical initiators, inert gases, oxygen scavengers.
Hazardous Decomposition Products	Fire will produce irritating and/or toxic gases, including acrid smoke, Carbon monoxide, Carbon dioxide, aldehydes, organic acids.
Hazardous Polymerisation	High temperatures, inhibitor depletion, accidental impurities or exposure to radiation or oxidisers may cause spontaneous polymerising reaction, generating heat/pressure.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight ingestion hazard. - Skin corrosion/irritation: Causes skin irritation. Although no appropriate human or animal health effects data are known to exist, this material is expected to be a skin irritant. Symptoms may include localized redness or rash and swelling of the affected area. Symptoms may be delayed. A more severe skin response may occur after prolonged contact with this material. - Eye damage/irritation: Causes serious eye irritation. Although no appropriate human or animal health effects data are known to exist, this material is expected to cause eye irritation with symptoms including burning sensation, tearing, redness or swelling. - Respiratory/skin sensitisation: May cause an allergic skin reaction. Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure. - Germ cell mutagenicity: No information available. - Carcinogenicity: No information available. - Reproductive toxicity: No information available. - STOT (single exposure): May cause respiratory irritation. No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols or vapours which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath. - STOT (repeated exposure): No information available. - Aspiration toxicity: No information available.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
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Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. *Residues and spilled material may be hazardous waste due to potential for internal heat generation.
Special Precautions for Land Fill	The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	EM211/EOEOEA
Class	C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	EM211/EOEOEA
Class	No Data Available
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	EM211/EOEOEA
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Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	EM211/EOEOEA
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	EM211/EOEOEA
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	EM211/EOEOEA
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION**General Information**

No Data Available

Poisons Schedule (Aust)

Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code

HSR002503
HSR007360 (Revoked)

National/Regional Inventories**Australia (AIC)**

Listed

Canada (DSL)

Listed

Canada (NDSL)

Not Determined

China (IECSC)

Listed

Europe (EINECS)

Listed

Europe (REACH)

Not Determined

Japan (ENCS/METI)

Listed

Korea (KECI)

Listed

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Listed

Philippines (PICCS)

Not Determined

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Listed

16. OTHER INFORMATION**Related Product Codes**

MONOMT1100, MONOMT1101, MONOMT1200

Revision

4

Revision Date

03 Aug 2020

Key/Legend

< Less Than
 > Greater Than
AICS Australian Inventory of Chemical Substances
atm Atmosphere
CAS Chemical Abstracts Service (Registry Number)
cm² Square Centimetres
CO₂ Carbon Dioxide
COD Chemical Oxygen Demand
deg C (°C) Degrees Celcius
EPA (New Zealand) Environmental Protection Authority of New Zealand
deg F (°F) Degrees Farenheit
g Grams
g/cm³ Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH₂O Inch of Water
K Kelvin
kg Kilogram
kg/m³ Kilograms per Cubic Metre
lb Pound
LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or L Litre
m³ Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m³ Milligrams per Cubic Metre
Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight