



# MATERIAL SAFETY DATA SHEET

Revision Date: 22/10/2013

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## REACTOR R-2000

### I. PRODUCT AND COMPANY IDENTIFICATION

NAME: REACTOR R-2000  
PRODUCT CLASS: AMINE  
CHEMICAL FAMILY: ALIPHATIC AMINE  
SALUD: DANGEROUS

#### INFORMATION

MANUFACTURER/SUPPLIER: EL NERVION S.A DE C.V.  
ALDAMA # 5, SAN. JERÓNIMO TEPETLACALCO,  
TLALNEPANTLA, EDO. MÉXICO, 54090  
MÉXICO  
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### II. COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	COMPONENTS	CAS NUMBER	CONCENTRATION [%]
01	DETA	111-40-0	9.50
02	EPOXY RESIN	CONFIDENTIAL	50.0
03	TOLUENE	108-88-3	20.5
04	BUTYL ALCOHOL	71-36-3	20.0

### III. HAZARDS IDENTIFICATION

Emergency Over

#### Physical Appearance

Form: Liquid  
Color: Transparente  
Odor: Amine/irritating  
Solubility in water: Partially soluble  
pH: 12

**EFFECTS OF EXPOSURE:** Flammable. Could be released gas / toxic fumes during combustion and / or thermal decomposition. A closed container can explode with extreme heat. Use cold water spray to cool containers to minimize fire risk of rupture. Vapors or mist may pose a risk of fire and explosion when exposed to extreme heat or ignition. Vapors may travel to areas outside the work place before turning on / back to vapor source. Ground containers and equipment before transfer to avoid static sparks. It has been associated with prolonged and repeated occupational exposure to solvents with brain and nervous system permanently. Intentional misuse by deliberately concentrating or inhaling solvents can be harmful or fatal. Cause respiratory tract irritation. May cause allergic respiratory reactions. Harmful if inhaled. Airways. The damage to the



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lungs and respiratory sensitization may be permanent. Cause skin irritation. May cause allergic skin reaction. A skin sensitizer.

### Potential Health Effects

**The EXPOSURE (prolonged or repeated use) may aggravate or accentuate any of these effects.**

**SKIN CONTACT:** Irritating. Harmful in contact with the skin. Causes burns irritation. Symptoms of overexposure may be headache, dizziness, fatigue, nausea and vomiting.

**INHALATION:** Irritating. Inhalation of aerosol may cause irritation of upper respiratory tract. May cause nose, throat and lungs. Inhalation of vapors and / or aerosols in high concentration can cause respiratory tract irritation.

**EYE CONTACT:** Irritating. Cause eye burns. It can cause blindness. Severe eye irritation.

**INGESTION:** Harmful if swallowed. If swallowed, severe burns of the mouth and throat and danger of perforation of the esophagus and stomach.

**MEDICAL CONDITIONS AGGRAVATED:** Eye disorders skin disease and allergies. Adverse effects on the skin (such as rash, irritation or corrosion). adverse eye effects (such as conjunctivitis or corneal damage). Asthma. Adverse respiratory effects (such as cough, chest tightness or difficulty breathing).

**PRIMARY ROUTE (S) OF ENTRY:** Skin contact, Inhalation, Contact, Ingestion, Eyes.

## IV. FIRST AID MEASURES

### GENERAL ADVICE

Consult a physician. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

### Inhalación

If inhalation of mists or spray, turn the person and take it to a cool place. Appearance of possible discomfort include severe irritation of the lining of the (nose, throat and eyes), sneezing, coughing and flow of the tears. In case of persistent discomfort, seek medical attention immediately. If breathing is stopped or is labored give assisted respirations, supplemental oxygen may be indicated. If the heart has stopped trained personnel should begin CPR immediately, move to fresh air.

### Skin Contact

Remove contaminated clothing and any chemical that strange, if possible without delay. Wash immediately with water for at least 20 minutes. Cover wound with sterile gauze. Remove contaminated clothing and shoes.

NOTE TO PHYSICIANS:



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Application corticosteroid cream has been effective in treating skin irritation.

### Eye Contact:

In case of contact, immediately flush eyes with water for at least 15 minutes, or if necessary with an eyewash solution. If an upset persistent, consult an ophthalmologist.

### Ingestion

In case of malaise seek medical advice immediately. Do not induce vomiting. If the person vomits and is lying on her back, will be placed in recovery position to avoid aspiration of vomit, turn the victim's head to one side.

## V. FIRE-FIGHTING MEASURES

FLASH POINT	:	210°F (98,89°C)
LOWER EXPLOSIVE LIMIT:		Not determined
UPPER EXPLOSIVE LIMIT:		Not determined
UTOIGNITION TEMPERATURE:		Not determined
FLAMMABLE-OSHA:		COMBUSTIBLE - CLASS II
CLASSIFICATION FLAMMABILITY-OSHA:		FLAMMABLE LIQUID

**EXTINGUISHING MEDIA:** Alcohol resistant foam, carbon dioxide, dry chemical, water fog (water spray for large fires), dry sand, limestone powder.

**SPECIFIC RISKS FIRE FIGHTING:** In case of fire, cool containers at risk with water. Closed containers may explode if heated strongly. Flammable liquid. The fumes can reach an ignition source and generate a setback. Explosive mixtures are formed at temperatures at or above the flash point. The staff at risk is downwind should be evacuated.

**EXTINGUISHING MEDIA SHOULD NOT BE USED FOR SAFETY:** Not applicable.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:** As in any fire, wear self-contained positive-pressure breathing apparatus (MSHA / NIOSH approved or equivalent) and full protective gear.

**HAZARDOUS DECOMPOSITION CAUSED BY:** Incomplete combustion can generate carbon monoxide, carbon dioxide, toxic gases or fumes.

**FLAMMABLE CLASSIFICATION-OSHA:** Combustible liquid, Class II.

## VI. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Wear appropriate protective clothing, gloves and eye / face. Use SCBA and chemical protective clothing. Evacuate personnel to safe areas.

**WHAT TO DO IN CASE OF SPILL:** Ventilate the area, remove or remove possible sources of sparks or flame and stir-absorbent inert material.



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### WHAT TO DO IN CASE OF SPILL:

- **SMALL SPILL:** Absorb liquid on paper, vermiculite, FLOORS OR OTHER ABSORBENT MATERIAL ABSORBING AND DISPOSE IN THE PROPER LINK.
- **LARGE SPILL:** REMOVE ALL SOURCES OF IGNITION. PEOPLE WITHOUT PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED BECAUSE OF THE SPILL AREA UNTIL YOU HAVE BEEN COMPLETELY CLEAN. STOP THE SOURCE OF SPILL, BUILD A DAM ABOUT THE SPILL AREA TO PREVENT SPREAD THE SPILL IS. PUMPING LIQUID TANK FOR FREE. COLLECT LEAKING LIQUID WHICH HAS BEEN IMPREGNATED WITH SAND, EARTH AND DEPOSIT FLOOR ABSORBENT IN A CONTAINER. REMAINS WILL PREVENT THE STREAMS OR OTHER BODIES OF WATER. IF A LEAK OCCURS, NOTIFY AUTHORITIES FOR THAT A SPILL HAS OCCURRED.

### WASTE DISPOSAL METHOD:

- **SMALL SPILL:** ALLOW VOLATILE evaporate PARTIES, TAKING THE TIME TO ENOUGH VAPORS ARE COMPLETELY DISSIPATED. HAVE THE REMNANTS OF MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.
- **LARGE SPILL:** DESTROY BY BURNING LIQUID. CONTAMINATED ABSORBENT MATERIAL IN A LANDFILL DEPOSIT ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS.

## VII. HANDLING AND STORAGE

### HANDLING

#### General procedure for handling

Tips for safe handling: Do not use sodium nitrile or other agents nitrosating in formulations containing this product is suspected to cause cancer, may form nitrosamines. Use respiratory protection when applied by spray. Ensure adequate ventilation. Use only in well ventilated areas. Avoid breathing vapors or aerosols. Avoid contact with skin and eyes. Showers eyewash stations and emergency tions must be easily accessible. They obey and must follow the rules work practices established by government regulations. Avoid contact with eyes. Use equipment personal protection. When using the Material NOT EAT, DRINK OR SMOKE.

Advice on protection against fire and explosion: Take steps to prevent static charges, keep away from sources of ignition.

### STORAGE

#### Requirements for storage areas and containers.

Keep containers tightly closed in a cool, dry, well-ventilated area.



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**life:**

6 months @ 77 ° F (25°C): After date of manufacture.

**Additional information**

Keep tightly sealed in its original packaging, do not store in reactive metal containers.

### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures**

Provide good ventilation if vapors / spray form.  
Provide natural ventilation or explosion proof adequate to ensure that concentrations are kept below the limit of exposure.

**Personal Protective Equipment**

**General precautions:** Avoid contact with eyes and skin.

**Hygiene measures:** Do not smoke, eat or drink while using this product.  
Wash hands before breaks and after work shift or using the toilet.

**Respiratory Protection:** Wear appropriate respirator when ventilation is inadequate. In case of vapor / aerosols: Team respiratory protection, cartridges for organic gases and vapors.

**Hand Protection:** Use gloves chemically resistant to this materials. Examples of barrier materials preferred glove include: Butyl rubber (IIR), Neoprene. The breakthrough time of gloves selected to be greater than the period of use provided

**Eye Protection:** Safety glasses should be worn resistant.

**Protective Clothing:** Light protective clothing is required.

### IX. PHYSICAL AND CHEMICAL PROPERTIES

**Form:** Liquid  
**Color:** Transparent  
**Odor:** Amine/irritant  
**Solubility in water:** Partially soluble  
**pH:** 12  
**Melting Point:** Not determined



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**Boiling point:** Bibliography >392°F (200°C)  
**Vapor pressure:** <0.14 mmHg a 69,8°F (21°C)  
**Flah point:** 388.4°F (198°C)  
**Density:** 0.9400 - 0.9600 g/cm<sup>3</sup>  
**Viscosity:** 1,000 - 2,000 cPs

### X. STABILITY AND REACTIVITY

**Thermal decomposition:** Not determined

**Hazardous reactions:** No hazardous reactions known if handled and stores the material properly.

**Hazardous Polymerization:** Not

**Stability:** This product is stable under normal conditions storage.

**Hazardous decomposition products (BY FIRE, BURN OR WELDING):** Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), dense black smoke, ammonia, nitrosamines, nitrogen oxides can react with water vapors to form corrosive nitric acid, and other compounds not determined.

**Materials to avoid:** organic acids (eg acetic acid, citric acid, etc., mineral acids, this product slowly corrodes copper, aluminum, zinc and galvanized surfaces. CAUTION N-nitrosamines, many of which are known to be powerful carcinogens may formed when the product comes in contact with nitrous acid, nitrates or atmospheres with high concentrations of nitrous oxide, nitrous acid and other nitrosating agents, oxidizing agents.

**Conditions to Avoid:** Heat, open flame, electric arc and sparks.

**Hazardous reactions:** No particular.

### XI. INFORMACIÓN TOXICOLÓGICA

**LD50 (ACUTE ORAL TOX):** LD50, Is estimated to be greater than 1080 mg/kg(rats)  
**LD50 (ACUTE DERMAL TOX):** LD50, Is estimated to be greater than 1090 mg/kg(rabbit)  
**LD50 (ACUTE INHALATION TOX):** LC50:> 0.07-<0.3 mg/L, 4h (rat) as aerosol  
**EFFECTS OF CHRONIC EXPOSURE:** No data available for this product.  
**AWARENESS:** Dermal: sensitizing (guinea pig maximization test)  
Skin: Non-sensitizing (guinea pig)  
Inhalation: Non-sensitizing (guinea pig)  
**CARCINOGENICITY:** No data available for this product.



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**REPRODUCTIVE TOXICITY:** No data available for this product.  
**TERATOGENICITY:** No data available for this product.  
**MUTAGENICITY:** No data available for this product.

## XII. INFORMACIÓN ECOLÓGICA

No ecotoxicological studies are available. The product is considered water contaminant. Not allow to enter the ground water or sewage.

### Ecotoxicity

<b>Aquatic toxicity:</b>	<b>Biodegradation</b>
<b>Toxicity to other organisms:</b>	No data available for this product.
<b>Persistence and degradability</b>	No data available.
<b>Mobility:</b>	No data available.
<b>Bioaccumulation:</b>	No data available for the product itself.

## XIII. DISPOSAL CONSIDERATIONS

The arrangement shall be in accordance with federal environmental control laws, state and local existents. Incineration is the preferred method.

**Provision of products and requirements for disposal:** In accordance with local standards, will be the incineration of hazardous waste.

**Contaminated Packaging:** Empty containers with product residues; observe all precautions for the product. Not Hot or cut empty containers with solder electric or gas because they are vapors and gases highly toxic. If empty contaminated containers are recycled or disposed of, the receiver must be informed about potential hazards.

**HOT OR NOT CUT THE EMPTY CONTAINERS OR WITH ELECTRIC WELDING GAS TORCH.**

## XIV. TRANSPORT INFORMATION

### DOT (LAND TRANSPORT)

Shipping name:	Reactor R-2000
Class:	3
UN NUMBER/No. ID:	1263
Packing Group:	III
Risk Label:	3



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### IATA/ICAO (AIRCRAFT)

Shipping name:	Reactor R-2000
Class:	3
UN NUMBER/No. ID:	1263
Packing Group:	III
Risk Label:	3

### IMDG/IMO (SHIPPING)

Shipping name:	Reactor R-2000
Class:	3
UN NUMBER/No. ID:	1263
Packing Group:	III
Risk Label:	3

## XV. REGULATORY INFORMATION

### Federal Regulations of the United States

Standard classification Hazard  
Communication OSHA:

Dangerous

## XVI. OTHER INFORMATION

### NFPA RATINGS 704M

HEALTH:	3
FLAMMABLE:	1
REACTIVITY:	0
OTHER:	G

### HMIS RATING

HEALTH:	3
FLAMMABILITY:	1
PHYSICAL HAZARD:	0

0 = Insignificant  
 1 = Slight  
 2 = Moderate  
 3 = High  
 4 = Extreme

0 = Insignificant  
 1 = Slight  
 2 = Moderate  
 3 = High  
 4 = Extreme  
 \* = Chronic Hazard for Health.

AND ALL THIS INFORMATION IS FURTHER TECHNICAL ADVICE BASED ON CURRENT KNOWLEDGE AND EXPERIENCE SA DE CV NERVION BELIEVED TO THIS INFORMATION IS ACCURATE TO THE DATE OF PUBLICATION BY THE BEST KNOWLEDGE OF NERVION SA DE CV THE INFORMATION PROVIDED IS INTENDED ONLY AS A GUIDE FOR SAFETY, USE, PROCESSING, STORAGE, TRANSPORTATION, DISPOSAL AND DOWNLOAD AND NOT TO BE CONSIDERED AS A GUARANTEE OR SPECIFICATION OF QUALITY. INFORMATION REFERRED TO IN SPECIFIC DESIGNATED MATERIAL AND IS NOT VALID FOR SUCH MATERIALS USED IN COMBINATION WITH ANY OTHER MATERIALS OR PROCESS UNLESS SPECIFIED IN THIS INFORMATION COME. RESPONSIBILITY AND LIABILITY IS THE CUSTOMER'S inspection and testing RECEIVE ANY PRODUCT. HOWEVER, SA DE CV NERVION ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF CONFIDENCE DO THIS INFORMATION HDS.

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