

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

PRODL
IDENTIFICA

Product Name

RXN-59

Code No.

ADDRESS:

REACTION ENGINEERING

PO Box 1452

Dodge City, KS 68701

Emergency Phone Number(s)

Business: 316-225-2154

Other: 800-424-9300 Chemtrec

CAS No.(s)

Not applicable for blends

Chemical Family

Water Treating Chemicals

HAZARDOUS
INGREDIENTS

PROPRIETARY FORMULATION

Synonyms

NONE

MATERIALS OR COMPONENTS

% w/w

HAZARD DATA (TLV, LD50, LC50, etc.)

CYCLOHEXYLAMINE

> 5

OSHA PEL NONE
ACGIH TLV 10 ppm

MORPHOLINE

> 5

OSHA PEL 20 ppm
ACGIH TLV 20 ppm

DIETHYLAMINOETHANOL

> 5

LD₅₀ 1300 mg/kg (rat)

SHIPPING
INFORMATION

WATER TREATING COMPOUND, LIQUID

CORROSIVE LIQUID

NA-1760

CORROSIVE LABEL REQUIRED

PHYS

| | | | |
|--|------------------------------------|--------------------------------|--------------------------------------|
| Boiling Point/Range °C 212 °F | Melting Point °C N/A °F | Freezing Point °C N/A °F | Molecular Weight (Calculated) N/E |
| Specific Gravity (H ₂ O=1) .891 @ 20/20 °C | Vapor Pressure (mm Hg) N/A @ °C | Vapor Density (Air=1) > 2.0 | |

PHYS
PRO

| | | | | | |
|--|------------------------------|-------------------------|------------------------------------|---|---|
| Solubility in H ₂ O 100% | % Volatiles by Volume 100 | Evaporation Rate > 1 | <input type="checkbox"/> Ether = 1 | <input checked="" type="checkbox"/> Water = 1 | <input type="checkbox"/> Butylacetate = 1 |
|--|------------------------------|-------------------------|------------------------------------|---|---|

FIRE AND
EXPLOSION DATA

| | | | |
|--------------------------|-------------|---|--|
| Flash Point °C N/E °F | Test Method | Flammable Limits Lower N/E % Upper N/E % | Autoignition Temperature/Fire Point °C °F |
|--------------------------|-------------|---|--|

| | | | | | | | | |
|---------------------|---|---|--|---|--|---------------------------------------|-------------------------------|--|
| EXTINGUISHING MEDIA | <input checked="" type="checkbox"/> Water-spray | <input checked="" type="checkbox"/> Water-fog | <input checked="" type="checkbox"/> Water stream | <input checked="" type="checkbox"/> CO ₂ | <input checked="" type="checkbox"/> Dry chemical | <input type="checkbox"/> Alcohol foam | <input type="checkbox"/> Foam | <input type="checkbox"/> Earth or sand |
|---------------------|---|---|--|---|--|---------------------------------------|-------------------------------|--|

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|----------------------------------|--|---|---|---|--|
| SPECIAL FIRE FIGHTING PROCEDURES | <input type="checkbox"/> Do not enter building | <input type="checkbox"/> Allow fire to burn | <input type="checkbox"/> Water may cause frothing | <input type="checkbox"/> Do not use water | <input checked="" type="checkbox"/> Use self-contained breathing apparatus |
|----------------------------------|--|---|---|---|--|

| | | | | | |
|------------------------------------|--|---|--|--------------------------------------|---|
| UNUSUAL FIRE AND EXPLOSION HAZARDS | <input type="checkbox"/> Dust explosion hazard | <input type="checkbox"/> Sensitive to shock | <input type="checkbox"/> Contamination | <input type="checkbox"/> Temperature | <input type="checkbox"/> Other (specify): |
|------------------------------------|--|---|--|--------------------------------------|---|

REACTIVITY DATA

| | | | | | | | |
|-----------|--|-----------------------------------|--|--|--|---|---|
| STABILITY | <input checked="" type="checkbox"/> Stable | <input type="checkbox"/> Unstable | CONDITIONS CONTRIBUTING TO INSTABILITY | <input type="checkbox"/> Thermal decomposition | <input type="checkbox"/> Photo degradation | <input type="checkbox"/> Polymerization | <input checked="" type="checkbox"/> Contamination |
|-----------|--|-----------------------------------|--|--|--|---|---|

| | | | | |
|--------------------------------------|--|--|--|---|
| INCOMPATIBILITY - Avoid contact with | <input checked="" type="checkbox"/> Strong acids | <input type="checkbox"/> Strong alkalies | <input checked="" type="checkbox"/> Strong oxidizers | <input type="checkbox"/> Other (specify): |
|--------------------------------------|--|--|--|---|

| | | | | |
|---|--|--|--|--|
| HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list) | May liberate CO ₂ , CO ₃ , and Oxides of Nitrogen. | | | |
|---|--|--|--|--|

SPILL,
LEAK

| | | | | | |
|---------------------|--|---|--|---|---|
| CONDITIONS TO AVOID | <input checked="" type="checkbox"/> Heat | <input checked="" type="checkbox"/> Open flames | <input checked="" type="checkbox"/> Sparks | <input type="checkbox"/> Ignition sources | <input type="checkbox"/> Other (specify): |
|---------------------|--|---|--|---|---|

| | | | | | | |
|--|---|--|-------------------------------------|---|--|---|
| STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED | <input type="checkbox"/> Flush with water | <input checked="" type="checkbox"/> Absorb with sand or inert material | <input type="checkbox"/> Neutralize | <input type="checkbox"/> Sweep or scoop up and remove | <input checked="" type="checkbox"/> Keep upwind. Evacuate enclosed spaces. | <input checked="" type="checkbox"/> Prevent spread of spill |
|--|---|--|-------------------------------------|---|--|---|

| | |
|--|---|
| X Dispose of immediately | <input type="checkbox"/> Other (specify): |
| WASTE DISPOSAL METHOD - Consult federal, state, or local authorities for proper disposal procedures. | |

In accordance with Federal, State and Local regulations.

CONTINUED ON
REVERSE SIDE

TOXICITY

| | | | | | |
|---------------------------|--|--|--|--|--|
| Oral (acute) | Severe irritant - possibly corrosive. | | | | |
| Dermal (acute) | Severe irritant. | | | | |
| Eye | Severe irritant. May cause blindness. Inhalation (acute) | | | | |
| Chronic, Subchronic, etc. | Irritation, nausea, vomiting. | | | | |

HEALTH HAZARD INFORMATION

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|-------------------------|---|--|--|---|-------------------------------------|
| Effect of Exposure | PERMISSIBLE EXPOSURE LIMIT (Specify if TLV/TWA or Ceiling (c)) | | | | |
| | ACGIH 19 | OSHA 19 | Other: | | |
| IRRITATION | <input checked="" type="checkbox"/> Skin <input checked="" type="checkbox"/> Eye | <input checked="" type="checkbox"/> Severe <input checked="" type="checkbox"/> Severe | <input type="checkbox"/> Moderate <input type="checkbox"/> Moderate | <input type="checkbox"/> Mild (transient) | |
| CORROSIVITY | <input checked="" type="checkbox"/> Skin <input checked="" type="checkbox"/> Eye | <input type="checkbox"/> 4 hrs. (DOT) <input checked="" type="checkbox"/> May cause blindness | <input type="checkbox"/> 24 hrs. (CPSC) | | |
| SENSITIZATION | <input type="checkbox"/> Skin <input checked="" type="checkbox"/> Respiratory | <input type="checkbox"/> Allergen | <input type="checkbox"/> Narcotic effect | <input type="checkbox"/> Cyanosis | <input type="checkbox"/> Asphyxiant |
| LUNG EFFECTS (Specify): | May increase susceptibility to respiratory illness. | | | | |
| OTHER (Specify): | <input type="checkbox"/> Repeated contact - skin defatting <input type="checkbox"/> Other (Specify): | | | | |
| INGESTION | <input type="checkbox"/> Induce vomiting <input checked="" type="checkbox"/> Do NOT induce vomiting | <input checked="" type="checkbox"/> Give plenty of water | <input checked="" type="checkbox"/> Get medical attention | <input type="checkbox"/> Other (specify): | |
| DERMAL | <input checked="" type="checkbox"/> Flush with soap and water <input type="checkbox"/> Get medical attention | <input checked="" type="checkbox"/> Contaminated clothing - remove & launder | <input checked="" type="checkbox"/> Contaminated shoes - destroy | <input type="checkbox"/> Other (specify): | |
| EYE CONTACT | <input checked="" type="checkbox"/> Flush with plenty of water for at least 15 minutes | <input checked="" type="checkbox"/> Get medical attention | <input type="checkbox"/> Other (specify): | | |
| INHALATION | <input type="checkbox"/> Remove to fresh air <input checked="" type="checkbox"/> If not breathing, give artificial respiration | <input checked="" type="checkbox"/> Give oxygen | <input checked="" type="checkbox"/> Get medical attention | <input type="checkbox"/> Other (specify): | |

SPECIAL PROTECTION INFORMATION

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|---|---|--|--|---|---|
| VENTILATION REQUIREMENTS - Always maintain exposure below permissible exposure limits | | | | | |
| <input type="checkbox"/> Consult an industrial hygienist or environmental health specialist | | <input type="checkbox"/> Local exhaust | <input checked="" type="checkbox"/> Use with adequate ventilation | <input type="checkbox"/> Check for air contaminant and oxygen deficiency | |
| <input type="checkbox"/> Other (specify): | | | | | |
| EYE | <input checked="" type="checkbox"/> Face shield and goggles <input checked="" type="checkbox"/> Safety glasses | HAND (GLOVE TYPE) | <input checked="" type="checkbox"/> Butyl rubber <input checked="" type="checkbox"/> Natural rubber | <input type="checkbox"/> Polyvinyl alcohol <input type="checkbox"/> Polyethylene | <input type="checkbox"/> Other (specify): |
| | <input type="checkbox"/> Goggles | <input checked="" type="checkbox"/> Polyvinyl chloride | <input checked="" type="checkbox"/> Neoprene | | |
| RESPIRATOR TYPE - Use only NIOSH approved equipment | | | | | |
| <input type="checkbox"/> Self-contained | <input type="checkbox"/> Supplied air | <input type="checkbox"/> Can or cartridge gas or vapor | <input checked="" type="checkbox"/> Filter - dust, fume, mist | <input type="checkbox"/> Other (specify): | |
| OTHER PROTECTIVE EQUIPMENT | | | | | |
| <input checked="" type="checkbox"/> Rubber boots | <input checked="" type="checkbox"/> Apron | <input type="checkbox"/> Other (specify): | | | |

SPECIAL PRECAUTIONS

| | | | | | |
|---|---|--|---|--|---|
| PRECAUTIONARY LABELING | | | | | |
| <input type="checkbox"/> Wash thoroughly after handling | <input checked="" type="checkbox"/> Do not get in eyes, on skin or clothing | <input checked="" type="checkbox"/> Do not breathe dust, vapor, mist, gas | <input checked="" type="checkbox"/> Keep container closed | <input checked="" type="checkbox"/> Keep away from heat, sparks, and open flames | <input type="checkbox"/> Store in tightly closed containers |
| <input type="checkbox"/> Do not store near combustibles | <input checked="" type="checkbox"/> Keep from contact with clothing and other combustible materials | <input checked="" type="checkbox"/> Empty container may contain hazardous residues | <input checked="" type="checkbox"/> Use explosion proof equipment | <input type="checkbox"/> Other (specify): | |

Other handling and storage conditions

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