

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS PREPARED BY: Environmental Health Dept.-Grace Construction Products
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MSDS Number: D-05516 000001 Cancels MSDS # D-05503 Date: 12/08/1999

Trade Names and Synonyms:
(SEE SECTION 16 FOR ADDITIONAL
PRODUCT IDENTIFICATION)

MIRA™ 70

Chemical Names and Family:

Aqueous Solution of Carboxylated
Polyether, Calcium Nitrate and
Amines and Glycols

Product Use:

Concrete Additive

Formula:

MIXTURE-NA

CAS# (Chemical Abstract Service):

MIXTURE-NA

SECTION 2 - HAZARDOUS INGREDIENT AND MAJOR COMPONENT INFORMATION
(See Section 11 for Complete Chemical Names)

EXPOSURE LIMITS

INGREDIENT:	Max. % By Wt.	Exposure Limits		
		OSHA	ACGIH	OTHER
2-PROPENOIC ACID HOMOPOLYMER REACTION PRODUCT WITH POLYALKOXYALKYLAMINE, SODIUM SALT CAS# 184785-41-9	10.00	None Established	None Established	None Established
AMINE COPOLYMER CAS# 09038-95-3	2.00	NONE ESTABLISHED	NONE ESTABLISHED	NONE ESTABLISHED
CALCIUM NITRATE CAS# 10124-37-5	5.00	None Established	None Established	None Established
HYDROXYCARBOXYLIC ACID SALT CAS# 31138-65-5	5.00	None Established	None Established	None Established
TRIETHANOLAMINE CAS# 00102-71-6	5.00	None Established	TLV - 5 mg/m 3	None Established

EXPOSURE GUIDELINES - CANADA

Employers should check with provincial regulatory agencies for exposure guidelines, which may vary locally.

SECTION 3 - HAZARDS IDENTIFICATIONEmergency Overview:Warning Statements:

WARNING! HARMFUL IF SWALLOWED. CONTACT CAUSES EYE IRRITATION.

- ... Contains 2-Propenoic acid homopolymer reaction product with Polyalkoxyalkylamine, Sodium salt CAS# 184785-41-9, Hydroxycarboxylic acid salts CAS# 31138-65-5, Calcium nitrate CAS# 10124-37-5, , Amine copolymer CAS# 9038-95-3, Triethanolamine CAS# 102-71-6 and Water CAS# 7732-18-5.
- ... Ingestion of large quantities may cause nausea, vomiting, cyanosis, collapse or coma which could be fatal.
- ... May cause eye and skin irritation.
- ... Inhalation of vapors or mists created when product is heated, sprayed or used in poorly ventilated areas may cause respiratory irritation.
- ... Ingestion may also cause liver and kidney damage, tumorigenic, mutagenic and reproductive effects.
- ... Read and understand all Health and Safety information on the product Label and Material Safety Data Sheet before use.

NPCA-HMIS Hazard Index:

- o Health: 2
 - o Flammability: 1
 - o Reactivity: 0
 - o Personal Protection: B
- (See Section 8)

Potential Health EffectsRoutes of Exposure:Inhalation:

Vapor is not expected to cause any adverse health effects during typical handling. Exposure to high air concentrations of vapors or aerosols and mists, generated by heating, spraying and use in poorly ventilated areas, may cause irritation of nose and throat. May result in headache, nausea and drowsiness. In addition, effects noted via ingestion are possible if inhaled in significant quantities. (See information below.)

Skin and Eye:

Direct eye contact may cause pain, redness, irritation, and blurred vision which can result in serious damage. Prolonged or repeated skin contact can cause irritation resulting in redness.

Ingestion:

May irritate the digestive system resulting in stomach pain, nausea and vomiting. Large amounts taken by mouth may cause nausea, vomiting, visual disturbances, pulmonary edema (from lung aspiration), sterility, liver and kidney damage, cyanosis (due to methemoglobin formation), abnormally slow respiration, collapse and coma which could be fatal. Repeated small doses may cause a fall in blood pressure, rapid pulse, headache and visual disturbances.

SECTION 3 - HAZARDS IDENTIFICATION (Cont'd)

Carcinogenicity Information:

This product contains no ingredient(s) at levels regulated as a positive, probable or possible carcinogen by the Occupational Safety and Health Administration (OSHA), the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP).

SECTION 4 - FIRST AID MEASURES

EYE: Flush eyes immediately with plenty of water for at least 15 minutes while holding eyelids open. Consult a physician if discomfort or irritation persists.

SKIN: Wash skin with soap and water. Consult a physician if irritation develops. Remove contaminated clothing and wash prior to reuse.

INGESTION: If swallowed, call a doctor or poison control center immediately. Decision to induce vomiting should be made by a physician. Never give anything by mouth to an unconscious person.

INHALATION: If inhaled and symptoms develop, get fresh air. If breathing has stopped, give artificial respiration then oxygen if needed. If irritation or discomfort persists, consult a physician.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Flammable Limits:

Method Used: Aqueous Solution

LEL N/A

UEL N/A

H.F.P.A. Rating: H-1 F-1 R-0

Extinguishing Media

In case of fire use water, dry chemical, Carbon dioxide or "alcohol" foam.

Special Fire Fighting Procedures

Not Applicable

Unusual Fire and Explosion Hazards

Not Applicable

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Prevent product from entering drinking water supplies or streams. Observing above precautions, collect liquid or absorb liquid with an inert, noncombustible material and remove for disposal. For large spills, dike area and pump waste material into closed containers for disposal or reclamation. Due to health effects of ingestion, large releases of nitrate containing products should be prevented from contacting water systems.

Spill reporting requirements and reportable quantities vary by region. In case of any spill or release, consult Section 6, 13 and 15 of the MSDS and all applicable state and local regulations.

SECTION 7 - HANDLING AND STORAGE INFORMATION

Precautionary Measures:

- ... Do not swallow. Practice good personal hygiene to avoid even incidental ingestion.
- ... Avoid contact with eyes and prolonged or repeated contact with skin.
- ... Avoid breathing vapors in head space of drums or if product is heated.
- ... Use with adequate ventilation. Consult Respiratory Protection section of MSDS if health effects are noted during product use.
- ... Do not spray apply material without proper precautions.
- ... Wash thoroughly after handling. Wash contaminated clothing before reuse.
- ... Keep containers closed when not in use.
- ... FOR PROFESSIONAL USE ONLY. KEEP OUT OF CHILDREN'S REACH.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:

- | | |
|----------------|--|
| Local Exhaust: | Recommended if vapor or mist is created. |
| Mechanical: | Recommended if vapor or mist is created. |
| Special: | Not Applicable |
| Other: | Not Applicable |

Respiratory Protection:

Respiratory protection is not generally required. However, if specific use generates vapors or mists, or if adverse health effects are noted, a NIOSH-approved air purifying respirator designed to filter mists and organic vapors should be required to ensure inhalation and ingestion of nitrates is adequately controlled.

Skin Protection:

Rubber or other impervious gloves should be worn to protect against contact.

Eye Protection:

Glasses with side shields or splash goggles should be worn to protect against eye contact and a face shield should be used if splashing is likely.

Other Protective Clothing or Equipment:

Wear appropriate clothing to prevent skin contact. Use of work apron is recommended if splashing is likely.

Work/Hygienic Practices:

This product may contain trace amounts of Ethylene oxide. This condition creates the potential for the accumulation of gas in the head space of shipping and storage containers or in enclosed areas if the product is spilled. Exposures during routine handling are expected to be well below exposure limits.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: >212°F/100°C Specific Gravity(H₂O=1) ~1.2

Vapor Pressure (mm Hg.) ~15 @ 25°C % Volatiles ~75% (As Water)
Estimated

Vapor Density(AIR = 1) >1 Evaporation Rate Less than 1
(Butyl Acetate = 1)

Solubility in Water: Miscible pH 7 - 10

Bulk Density (#/cu. ft): Not Applicable

Appearance and Odor: Amber, yellow liquid with a
slight odor of acrylic acid.

Odor Threshold:
Not Determined

SECTION 10 - STABILITY AND REACTIVITY

Stable under normal conditions (yes or no): YES

Conditions or Materials to avoid (which may react or cause instability):
Will decompose if dried and heated to >1,000°F.

Hazardous Decomposition or Byproducts:

Toxic levels of Ammonia, combustion products of Nitrogen, Carbon monoxide, Carbon dioxide, irritating Aldehydes and Ketones may be formed on burning.

Hazardous Polymerization:

Will not occur.

Conditions to Avoid:

None Known

SECTION 11 - TOXICOLOGICAL INFORMATION

INGREDIENT (Chemical Name, CAS#, & Common Name)	TOXICITY DATA LD ₅₀ , LC ₅₀ etc. (See Section 2 for Exposure Limits)
2-Propenoic Acid Homopolymer	LD ₅₀ (oral, rat) >500 mg/kg
Reaction Product with Polyalkoxy- alkylamine, Sodium Salt CAS# 184785-41-9	LD ₅₀ (skin, rabbit) >1,000 mg/kg
Hydroxycarboxylic Acid Salts CAS# 31138-65-5	No Data Available
Triethanolamine CAS# 102-71-6	LD ₅₀ (oral, rat) 8,000 mg/kg
Calcium Nitrate CAS# 10124-37-5	LD ₅₀ (oral, rat) 3,900 mg/kg
Amine Copolymer) CAS# 09038-95-3	LD ₅₀ (oral, rat) >5,000 mg/kg

SECTION 12 - ECOLOGICAL INFORMATION

None Available At This Time.

SECTION 13 - DISPOSAL CONSIDERATIONS

Consult all regulations (federal, state, provincial, local etc.) or a qualified waste disposal firm when characterizing waste for disposal. Dispose of waste in accordance with all applicable regulations.

According to US EPA (40 CFR § 261) waste of this product is not defined as hazardous.

SECTION 14 - TRANSPORT INFORMATION**Transportation Hazard Classification****PROPER SHIPPING:** Not Applicable

NAME
HAZARD CLASS: Not Applicable
IDENTIFICATION #: Not Applicable
LABEL(s) REQUIRED: Not Applicable

Surface Freight Classification:

Concrete/Masonry Plasticizer and Water Reducing Compound

SECTION 15 - REGULATORY INFORMATION

(Not Meant To Be All Inclusive
Selected Regulations Represented)

SARA TITLE III REPORTING INFORMATION
Tier I & II HAZARD CATEGORIES:

DELAYED (CHRONIC) HEALTH
IMMEDIATE (ACUTE) HEALTH

Contains Extremely Hazardous-SARA III Section 302 Ingredient: NO
Comments:

Contains Toxic Chemical Release-SARA III Section 313 Ingredient: YES
Comments: Contains Calcium nitrate at 5%: REPORTABLE

Other Government Reporting Requirements:

TOXIC SUBSTANCE CONTROL ACT (TSCA): All components in this product are included in the TSCA Inventory and/or exempt from listing in accordance with the Polymer Exemption Rule (40 CFR § 723.250). This product may contain trace amounts of Acrylic acid, Acetone, Diethanolamine and Isopropyl alcohol which are subject to export notification requirements in accordance with Section 12(b) of TSCA.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All ingredients contained in this product comply with the requirements of the Canadian Environmental Protection Act (CEPA).

CALIFORNIA PROPOSITION 65 INFORMATION: WARNING! This product contains substances at trace levels known to the State of California to cause cancer, birth defects or other reproductive harm. (Ethylene Oxide)

WHMIS CLASS: D-2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR). This MSDS contains all the information required by the CPR.

Nonhazardous Ingredient Disclosure:

Water CAS# 7732-18-5, Hydroxycarboxylic acid salts CAS# 31138-65-5, 2-Propenoic acid homopolymer reaction product with Polyalkoxyalkyl-amine sodium salt CAS# 184785-41-9, Amine copolymer CAS# 9038-95-3.

SECTION 16 - OTHER INFORMATION

The information contained in this Material Safety Data Sheet is applicable to the following products:

MIRA™ 70

Daracem® 76C

"THE DATA INCLUDED HEREIN ARE PRESENTED IN ACCORDANCE WITH VARIOUS ENVIRONMENT, HEALTH AND SAFETY REGULATIONS. IT IS THE RESPONSIBILITY OF A RECIPIENT OF THIS DATA TO REMAIN CURRENTLY INFORMED ON CHEMICAL HAZARD INFORMATION, TO DESIGN AND UPDATE ITS OWN PROGRAM AND TO COMPLY WITH ALL NATIONAL, FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS APPLICABLE TO SAFETY, OCCUPATIONAL HEALTH, RIGHT-TO-KNOW AND ENVIRONMENTAL PROTECTION."