



MATERIAL SAFETY DATA SHEET



Responsible Care
Good Chemistry at Work

FR-1 RED CONCENTRATE

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME	FR-1 Red Concentrate	TELEPHONE	626-334-2908
MANUFACTURER	Norac, Inc.	CHEMTREC (24hr) (USA)	800-424-9300
ADDRESS	405 S. Motor Ave., Azusa, CA 91702	(Maritime/International)	703-527-3887
CHEMICAL NAME	Dye in N-methyl-2-pyrrolidone	CAS NO.	See Section 2
CHEMICAL FAMILY	Dye in a cyclic amide	CHEMICAL FORMULA	Mixture

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	%
n-Methyl-2-pyrrolidone	872-50-4	97 - 98
Red dye	Proprietary	2 - 3

SECTION 3 - HAZARD IDENTIFICATION OF THE PREPARATION

PHYSICAL HAZARDS	Combustible liquid.
HEALTH HAZARDS	Potential reproductive toxin. Irritating to skin and eyes.
EXPOSURE LIMITS	None established.
ROUTES OF EXPOSURE	
Skin Contact	Skin contact may cause delayed skin irritation and blistering. May dye the skin red. No significant signs or symptoms are expected to occur as a result of skin absorption exposure.
Eye Contact	Eye contact may cause moderate irritation, including burning sensation, tearing, redness or inflammation.
Ingestion	Ingestion of large quantities may be a slight health hazard.
Inhalation	Inhalation is not expected to cause any significant signs or symptoms of adverse health hazards.
EFFECTS OF OVER-EXPOSURE	Potentially fetotoxic in extremely high doses. Not mutagenic in Ames test.

SECTION 4 - FIRST-AID MEASURES

Skin	Wash contaminated area thoroughly with soap and water. Seek medical attention if irritation develops.
Eyes	Remove any contact lenses at once. Flush eyes with water for 20 - 30 minutes and seek medical attention.
Ingestion	If large quantity swallowed give lukewarm water (pint) if victim is completely conscious and alert. Contact a physician, hospital or Poison Control Center at once. DO NOT INDUCE VOMITING.
Inhalation	Immediately remove to fresh air, if coughing, breathing becomes labored, irritation develops or other symptoms develop, seek medical attention at once, even if symptoms develop several hours after the exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT	204°F (95.5°C), C.O.C.
FLAMMABLE LIMITS	LEL 1.3% - UEL 9.5% by volume
AUTOIGNITION POINT	Approximately 518°F (270°C)
EXTINGUISHING MEDIA	Carbon dioxide, foam or dry chemical extinguishers. Water fog to fight fire, water fog/spray to cool containers near fire.
SPECIAL FIRE FIGHTING PROCEDURES	Fight fire from a safe distance. Heat may build up enough pressure to rupture closed containers, spreading the fire and increasing the risk of burns or other injuries. Firemen should be equipped with protective clothing and SCBA's. In case of fire near storage area, cool the containers with water fog or spray.

FR-1 Red Concentrate

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated above flash point, material releases flammable vapors. When mixed with air and exposed to an ignition source, vapors can burn or explode. Vapors may travel long distances along the ground before igniting and flashing back to the vapor source. Residue from fire or spill is a red dye.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN EVENT OF SPILL OR RELEASE

Evacuate area of all unnecessary personnel. Remove all sources of ignition. Refer to protective measures listed in sections 7 and 8. Spilled material should be swept up with an inert, moist diluent such as perlite, vermiculite, or sand. Keep spilled material from entering drains, sewers, streams, etc. Carefully collect the material using non-sparking tools and transfer into a clean polyethylene lined or a polyethylene drum disposal container. Label container and store in a secure area for proper disposal. Prevent material from entering drains, sewers, streams, etc.

SECTION 7 - HANDLING AND STORAGE

HANDLING

Keep containers tightly closed. Rotate stock using the oldest material first. Take precautionary measures against static discharge. **DO NOT USE NEAR FOOD OR DRINK.** Avoid skin and eye contact. Avoid breathing vapors and use with adequate ventilation. Wear personal protection equipment recommended in section 8. Reseal containers immediately after use.

STORAGE

Keep material in its original container away from any incompatible materials, direct sunlight or other sources of heat. **DO NOT STORE WITH FOOD OR DRINK.** Store in an isolated, cool and well-ventilated area.

OTHER PRECAUTIONS

Containers of this material may be hazardous when empty since they retain product residues, observe all warnings and precautions listed. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

VENTILATION

Use with adequate ventilation.

RESPIRATORY PROTECTION

If airborne concentrations are expected to exceed acceptable levels wear a NIOSH/MSHA approved air-purifying respirator with an organic vapor cartridge or canister. When using respirators refer to OSHA's 29CFR 1910.134. In case of spill or leak of unknown concentration, use NIOSH/MSHA approved supplied air respirator.

EYE PROTECTION

Safety goggles recommended, goggles with a face shield are preferred.

HAND PROTECTION

Protective gloves recommended, solvent resistant.

OTHER

A safety shower and eyewash is highly recommended when the risk of a significant exposure exists.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Intensely red liquid with an amine-like odor.

BOILING POINT:

~ 400°F (204°C)

SPECIFIC GRAVITY:

1.04 (Water = 1)

VAPOR PRESSURE:

4 mmHG @ 140°F

FLASH POINT:

204°F (95°C), C.O.C.

VAPOR DENSITY:

> 1

FLAMMABLE LIMITS:

LEL 1.3% - UEL 9.5%

EVAPORATION RATE:

< 1 (butyl acetate = 1)

SADT:

Not applicable

% VOLATILE BY VOLUME:

84 - 92%

pH:

Not applicable

SOLUBILITY IN WATER:

4%

Other properties

Hygroscopic

SECTION 10 - STABILITY AND REACTIVITY

STABILITY

Stable under normal conditions of use.

CONDITIONS TO AVOID

Storage in direct sunlight, high temperatures, flames, sparks. Prevent product contamination.

MATERIALS TO AVOID

Strong oxidizing agents. Reducing agents.

HAZARDOUS

Carbon monoxide and nitrogen oxide vapors emitted when heated to decomposition.

DECOMPOSITION PRODUCTS

FR-1 Red Concentrate

HAZARDOUS
POLYMERIZATION

Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

n-Methyl-2-pyrrolidinone

Hazard Data:

Reproductive Effects

Dermal: Rabbit--TD_{Lo}: 7500 mg/kg (6-15D preg), Effects on fertility - post implantation mortality (e.g., dead and/or resorbed implants per total number of implants, Effects on fertility - litter size (e.g., # fetuses per litter; measured before birth), Effects on embryo or fetus - fetotoxicity (except death, e.g., stunted fetus).

Inhalation: Rat--LC_{Lo} 116 ppm/6H (multigenerations), Effects on embryo or fetus - fetotoxicity (except death, e.g., stunted fetus).

Oral: Rat--TD_{Lo}: 9700 mg/kg (6-15D preg), Effects on embryo or fetus - fetal death, Specific developmental abnormalities - other developmental abnormalities.

Toxic Effects

Dermal: Rabbit--LD₅₀: 8 g/kg

Inhalation: Rat--LC_{Lo} 1g/m³

Intraperitoneal: Mouse--LD₅₀: 3050 mg/kg; Rat--LD₅₀: 2472 mg/kg.

Intravenous: Dog--LD₅₀: 63330 ug/kg; Mouse--LD₅₀: 54500 ug/kg; Rat--LD₅₀: 80500 ug/kg.

Oral: Mouse--LD₅₀: 5,130 mg/kg, Rat--LD₅₀: 3,914 mg/kg.

Subcutaneous: Rat--LD_{Lo}: > 2 g/kg.

Tumorigenic Effects

Oral: Mouse--TD_{Lo}: 784 gmg/kg/7W-C.

Proprietary Red Dye

Hazard Data:

Toxic Effects

Oral: Rat--LD₅₀: >5000 mg/kg. (based on testing similarly composed product)

SECTION 12 - ECOLOGICAL INFORMATION

No data is available on the preparation itself.

n-Methyl-2-pyrrolidinone

Ecotoxicity: No data available

Environmental Fate:

Abiotic degradability: photolysis half-life 5.2 hrs.

Biotic Degradability: BOD 92% (14day). Theo. BOD
(Modified MITI Test) 73% (28 day)

Bioaccumulation: This material is not expected to bioaccumulate.

Biodegradation: This material is expected to be readily biodegradable.

Proprietary Red Dye

Ecotoxicity: Fish(Unknown)--LC₀: >100 mg/L/96hr

The product should be prevented from entering drains, sewers, streams, etc.

SECTION 13 - DISPOSAL CONSIDERATIONS

Prevent material from entering drains, sewers, streams, etc.

Immediately dispose of waste material at a RCRA approved hazardous waste management facility in accordance with federal, state and local regulations. Burn/incinerate concentrated liquids. Avoid overloading/poisoning plant biomass. Dilute aqueous waste may biodegrade.

SECTION 14 - TRANSPORT INFORMATION

Non Regulated By DOT

FR-1 Red Concentrate**SECTION 15 - REGULATORY INFORMATION**

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent</u>
None		

TSCA Status

The ingredients in this product are listed in the US Toxic Substances Control Act (TSCA) Inventory of Chemicals.

Status of Carcinogenicity

Not recognized as a carcinogen by the IARC, NTP or OSHA.

California Prop. 65

N-methyl pyrrolidone is subject to California's Prop. 65 regulations.

SECTION 16 - OTHER INFORMATION**VOC Information**

Using ASTM Test Method D-2369-87, FR-1 Red Concentrate contains 97.0% VOC, by weight, or 1009 grams per liter. For more information call Norac.

NFPA 704 Rating

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
1	1	0

HMIS Rating

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
2	1	0

MSDS Reference: FR-1 MSDS 0408.1

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