

SAFETY DATA SHEET**FR-1 RED CONCENTRATE**

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	1 / 12

1. Identification**1.1. Product identifier**

Trade name FR-1 RED CONCENTRATE
Chemical Name Dye in N-methyl-2-pyrrolidone (NMP)

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified Industrial Use

1.3. Details of the supplier of the safety data sheet

Company United Initiators, Inc.
334 Phillips 311 Rd.
Helena, AR 72342-9033
USA

Telephone 870-572-2935

Telefax 870-572-1416

Email address Cs-initiators.nafta@united-in.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA: 800-424-9300

CHEMTREC INTERNATIONAL: +1 703-527-3887 (collect calls accepted)

Product Regulatory Services : 800-231-2702

2. Hazards identification**2.1. Classification of the substance or mixture**

Classification according to Regulation 29CFR 1910.1200

Flammable liquids	Category 4	H227
Skin irritation	Category 2	H315
Eye irritation	Category 2A	H319
Reproductive toxicity	Category 2	H361
Specific target organ toxicity - single exposure (Respiratory system)	Category 3	H335

2.2. Label elements

Statutory basis
Symbol(s)

Classification according to Regulation 29CFR 1910.1200



SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**
driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	2 / 12

Signal word	Warning
Hazard statement	H227 - Combustible liquid. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H361 - Suspected of damaging fertility or the unborn child.
Precautionary statement: Prevention	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 - Wash skin thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement: Reaction	P302 + P352 - IF ON SKIN: Wash with plenty of water/ soap. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 - IF exposed or concerned: Get medical advice/ attention. P332 + P313 - If skin irritation occurs: Get medical advice/ attention. P337 + P313 - If eye irritation persists: Get medical advice/ attention. P362 + P364 - Take off contaminated clothing and wash it before reuse. P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
Precautionary statement: Storage	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P235 - Keep cool. P405 - Store locked up.
Precautionary statement: Disposal	P501 - Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

None known

3. Composition/information on ingredients

• N-methyl-2-pyrrolidone	97% - 98%
CAS-No.	872-50-4
Flammable liquids	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Reproductive toxicity	Category 2
Specific target organ toxicity - single exposure (Respiratory system)	Category 3

Other information

This material is classified as hazardous under OSHA regulations.

4. First aid measures**4.1. Description of first aid measures**

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**

driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	3 / 12

Inhalation

Provide fresh air, seek medical advice if necessary.
In case of difficulties in breathing, supply oxygen.

Skin contact

Take off all contaminated clothing immediately.
Wash off with plenty of water and soap.
Consult a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses if this can be easily done.

Ingestion

If swallowed, call a poison control centre or doctor immediately.
DO NOT INDUCE VOMITING.

4.2. Most important symptoms and effects, both acute and delayed**Symptoms**

None known

4.3. Indication of any immediate medical attention and special treatment needed

None known

5. Fire-fighting measures**5.1. Extinguishing media**

Suitable extinguishing media: Carbon dioxide (CO₂), dry powder, alcohol stable extinguishing foam, water spray

Unsuitable extinguishing media: High volume water jet

5.2. Special hazards arising from the substance or mixture

Closed container may rupture if strongly heated.

In case of fire cool endangered containers with water. Formation of flammable or explosive vapour/air mixtures possible.

Combustible air-vapour mixtures are heavier than the air and spread along the floor. Ignition from a considerable distance is possible. May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition and nitric oxides.

harmful gases/vapours

combustible gases/vapours

5.3. Advice for firefighters

Evacuate area and fight fire from a safe distance.

Fire fighters must wear positive pressure self-contained breathing apparatus and full protective clothing.

In the case of fire, cool the containers that are at risk with water or dilute with water (flooding).

Respiratory protective equipment independent of surrounding air, chemical protective suit

6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Wear personal protective equipment; see section 8. Avoid contact with skin and eyes. Do not inhale vapours / aerosols. Ensure adequate ventilation. Keep away from sources of ignition - No smoking.

Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2. Environmental precautions

Do not allow entrance in sewage water, drainage systems, stretches of water, soil.

6.3. Methods and material for containment and cleaning up

Take up mechanically or with an absorbent material. Remove all sources of ignition.

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**
driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	4 / 12

Additional advice

Use personal protective equipment as described in Section 8. Absorb spill with inert material and place in a chemical waste container. Obey relevant local, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

7. Handling and storage**7.1. Precautions for safe handling**

Wear personal protective equipment; see section 8. Avoid contact with skin and eyes. Do not inhale vapours / aerosols. Provide good ventilation or extraction.

7.2. Conditions for safe storage, including any incompatibilities**Advice on protection against fire and explosion**

Take precautionary measures against static discharges.
Keep away from sources of ignition - No smoking.
Provide fire extinguisher.

Storage

Keep container tightly closed in a dry and well-ventilated place.
Keep in a cool place.
Avoid heat effect and sources of ignition.
Keep in inert gas.
Protect from moisture.

Further information

Store in original container.
Store apart from other dangerous and incompatible substances.
Keep containers tightly closed in a cool, well-ventilated place.

8. Exposure controls/personal protection**8.1. Control parameters****Other information**

Contains no substances with occupational exposure limit values.

8.2. Exposure controls**Engineering measures**

Provide sufficient air exchange and/or exhaust in work rooms.

8.3. Personal protective equipment**Respiratory protection**

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection

Solvent-resistant gloves (butyl-rubber)
Glove material butyl-rubber

Eye protection

Tightly fitting safety goggles

Skin and body protection

A safety shower and eye wash fountain should be readily available.

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**

driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	5 / 12

Hygiene measures

Do not eat, drink or smoke during use.

Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

physical state	liquid
Colour	Intensely red
Form	liquid
Odour	amine-like
Odour Threshold	No data available
pH	Not applicable
Melting point/range	no data available
Boiling point/range	204 °C
Flash point	> 90 °C
Method:	Setaflash Closed Cup
Evaporation rate	< 1
Flammability (solid, gas)	no data available
Lower explosion limit	1.3 %(V)
Upper explosion limit	9.5 %(V)
Vapour pressure	4 mmHg (140 °F)
Relative vapour density	> 1
Relative density	1.04
Water solubility	slightly soluble (4%)
Partition coefficient: n-octanol/water	no data available
Autoignition temperature	270 °C
Thermal decomposition	no data available
Viscosity, dynamic	no data available
Viscosity, kinematic	no data available

9.2. Other information

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**

driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	6 / 12

no data available

10. Stability and reactivity**10.1. Reactivity**

Stable under recommended storage conditions.

10.2. Chemical stability

No dangerous reaction known under conditions of normal use.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Vapours may form explosive mixture with air.

Reacts violently exothermic with:
strong oxidants
reducing agents
strong acids**10.4. Conditions to avoid**Heat, flames and sparks.
To avoid thermal decomposition, do not overheat.
No decomposition if used as directed.**10.5. Incompatible materials**

Strong oxidizing agents, Reducing agents, Strong acids

10.6. Hazardous decomposition productsDecomposition products in combustion and thermal decomposition
carbon monoxide, carbon dioxide, nitric oxides, harmful gases/vapours, combustible gases/vapours**11. Toxicological information****11.1. Information on toxicological effects**

carcinogenicity assessment Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.

Toxicological information on components**N-methyl-2-pyrrolidone**

Acute oral toxicity	LD50 Oral rat(male/female): 4150 mg/kg Method: analogy OECD TG 401
Acute inhalation toxicity	LC50 rat(male/female): > 5.1 mg/l / 4 h / Aerosol Method: OECD Test Guideline 403 (limit test)
Acute dermal toxicity	LD50 Dermal Rat(male/female): > 5000 mg/kg Method: Analogy OECD-method
Skin irritation	Rabbit Irritating to skin. Method: Draize Test
Eye irritation	Rabbit

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**
driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	7 / 12

Irritating to eyes.
Method: Draize Test

Sensitization species not listed: not sensitizing to the skin

Assessment of STOT single exposure Assessment: May cause respiratory irritation.

CMR assessment

Teratogenicity Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

12. Ecological information**12.1. Toxicity**

Toxicity to fish LC50 static test *Oncorhynchus mykiss* (rainbow trout): > 500 mg/l / 96 h
Analytical monitoring: yes
(limit test)

LC50 *Leuciscus idus*: > 500 mg/l / 96 h

Toxicity in aquatic invertebrates EC50 static test *Daphnia magna*: > 1000 mg/l / 24 h

Toxicity to algae ErC50 static test *Desmodesmus subspicatus* (green algae): 600.5 mg/l / 72 h
End point: growth rate
(calculated)

Toxicity to bacteria EC50 static test Industrial sewage sludge: > 600 mg/l / 30 min

12.2. Persistence and degradability

Biodegradability no data available

12.3. Bioaccumulative potential

Bioaccumulation no data available

12.4. Mobility in soil

Mobility There is no data available for this product.

12.5. Other adverse effects

Further Information Do not allow to enter waste water drains, watercourse or soil.

13. Disposal considerations**13.1. Waste treatment methods**

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**
driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	8 / 12

Product

Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method of disposal. Contact United Initiators for additional information. Empty containers must be handled with care due to product residue. **DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.**

Uncleaned packaging

Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

14. Transport information

Not dangerous according to transport regulations.

- 14.1. UN number: --
14.2. UN proper shipping name: --
14.3. Transport hazard class(es): --
14.4. Packing group: --
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: Yes
Not dangerous according to transport regulations.

15. Regulatory information**US Federal Regulations****OSHA**

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Fire Hazard

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**
driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	9 / 12

SARA Title III Section 313 Reportable Substances

If listed below, components 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:

- N-methyl-2-pyrrolidone
CAS-No. 872-50-4

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations**California Proposition 65**

A warning under the California Drinking Water Act is required only if listed below:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

- N-methyl-2-pyrrolidone
CAS-No. 872-50-4

International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

- | | |
|--------------------------|-----------------------|
| • Europe (EINECS/ELINCS) | listed/registered |
| • USA (TSCA) | listed/registered |
| • Canada (DSL) | listed/registered |
| • Australia (AICS) | listed/registered |
| • Japan (MITI) | not listed/registered |
| • Philippines (PICCS) | not listed/registered |
| • China | not listed/registered |
| • Korea | not listed/registered |
| • New Zealand | not listed/registered |

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health :	2*
Flammability :	1
Physical Hazard :	0

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS***driving your success*

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	10 / 12

NFPA Ratings

Health :	2
Flammability :	1
Reactivity :	0

16. Other information**Further information**

Revision date 02/23/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS**

driving your success

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	11 / 12

Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygienists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic-mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization For Standardization
LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(E)C50	LC50 or EC50
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative
voc	volatile organic compounds

SAFETY DATA SHEET**FR-1 RED CONCENTRATE****UNITED INITIATORS***driving your success*

Material no.		Version	1.0 / US
Specification	185857	Revision date	02/23/2015
Order Number		Print Date	04/09/2015
		Page	12 / 12

WHMIS
WHOWorkplace Hazardous Materials Information System
World Health Organization