Safety Data Sheet

Opti Resin 040-8077 Polyester Laminating Resin

Date of Preparation: December 1, 2015

Section 1 Chemical Product and Company Identification

HMIS	
H	3
F	2
R	1
PPE	Sec. 8

1.1 Product identifiers

Product name: Opti Resin 040-8077 Polyester Laminating Resin

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: N/A

1.3 Details of the supplier of the safety data sheet

Freeman Manufacturing and Supply Company
1101 Moore Road, Avon, OH 44011
Phone (440) 934-1902
FAX (440) 934-7200

1.4 Emergency telephone number

Emergency Phone (800) 424-9300

Section 2 Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

Flammable Liquids, Category 3
Acute Toxicity, inhalation, Category 4
Skin Irritation, Category 2
Potential Health Effects, Category 2

2.2 GHS Label elements, including precautionary statements

Signal word Warning

Hazard statements

Flammable liquid and vapor.
Causes skin irritation.
Causes eye irritation.
Harmful if inhaled.
Dust is suspected of causing cancer.
Suspected of damaging the unborn child.
May cause damages to organs through prolonged or repeated exposure
May be harmful if swallowed.
May cause skin allergic reactions.

Precautionary statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed when not in use.
Keep cool.
Ground/bond container and receiving equipment.

Section 2 Hazards Identification cont.

Do not breathe fumes or vapors.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response

If on skin: Remove all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and call doctor/physician if not feeling well.
If in eyes: Rinse continuously with water for at least 15 minutes. Remove contact lenses, if present and easy to do.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Contaminated work clothing should not be allowed out of the workplace

Storage

Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents and container to an appropriate waste site in accordance with local and national regulations.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

Section 3 Composition/Information on Ingredients

3.1 Substance

Ingredient Name	CAS Number
Polyester Resin	Proprietary
Styrene Monomer	100-42-5
Methyl Methacrylate	80-62-6

Section 4 First Aid Measures

4.1 Description of first aid measures

If inhaled

Move person into fresh air, give artificial respiration or give oxygen. Call a physician immediately. Risk of pulmonary aspiration in case of serious incident.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes thoroughly with water. If irritation persists, consult a physician.

If swallowed

Do not induce vomiting, rinse mouth. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Section 5 Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Nature of decomposition products not known.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available.

Section 6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Avoid breathing vapors and ventilate area.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain and remove with inert absorbent material and non-sparking tools. Keep in suitable, closed containers for disposal.

Section 7 Handling and Storage

7.1 Precautions for safe handling

Use normal precautions when handling flammable materials. Do not breathe fumes or vapor. Do not allow material to contact skin. Provide appropriate exhaust ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Store at ambient temperatures in closed containers. This material can catch fire if overheated. Keep away from heat, sparks, and flame. Emptied containers may retain hazardous residue and explosive vapors. Do not mix residues of this product with any other petroleum wastes.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters

Components with workplace control parameters

Ingredient	OSHA		ACGIH	
	TWA	STEL	TWA	STEL
Styrene Monomer	50 ppm	100 ppm	50 ppm	100 ppm
Methyl Methacrylate	100 ppm	Not estab.	50 ppm	100 ppm

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits. An eye wash station and safety shower should be located near the workstation.

Section 8 Exposure Controls/Personal Protection cont.

8.3 Personal protective equipment

Eye/face protection

With product at ambient temperatures, use safety glasses equipped with side shields.

8.4 Skin protection

Hand Protection

With product at ambient temperatures, use disposable nitrile gloves.
Contaminated gloves should be replaced.

Body Protection

Prevent skin contact when handling material.

8.5 Respiratory Protection

The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used.

8.6 Safety Stations

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

8.7 General Hygienic Practices

Avoid breathing vapor or mist. Avoid contamination of food, beverages, or smoking materials. Wash thoroughly after handling, and before eating, drinking or smoking. Remove contaminated clothing promptly and clean thoroughly before reuse.

Section 9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Transparent liquid
Odor	Styrene/aromatic
Odor Threshold	No data available
pH	No data available
Melting Point	No data available
VOC Content	No data available
Initial boiling point & boiling range	No data available
Flash Point (COC)	32°C (90°F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability	No data available
Vapor Pressure	No data available
Vapor density	No data available
Relative density (g/cc)	1.2±0.05
Water Solubility	Negligible
Coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Viscosity	Paste at Room Temperature
Explosive Properties	None
Oxidizing Properties	None
% Volatile	No data available

Section 10 Stability and Reactivity

10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
May occur with an exothermic reaction.
10.4 Conditions to avoid
Heat, open flames, and improper addition of promoter and/or catalyst. Avoid direct contact of MEKP with accelerator (cobalt, calcium, potassium's salts).
10.5 Incompatible materials
Oxidizers, peroxides, strong acids.
10.6 Hazardous decomposition products
Thermal oxidative decomposition can produce organic acids, CO and CO_2.

Section 11 Toxicological Information

11.1 Information on toxicological effects

Acute Oral toxicity	Styrene: LD 50 4.37 g/kg (rat)
Acute Inhalation toxicity	May cause central nervous system depression causing headache, nausea, vomiting, drowsiness, dizziness, and muscle weakness. High concentrations can lead to convulsions, coma, and death.
Acute Dermal toxicity	Styrene: LD 50 5g/kg (rabbit)
Skin corrosion/irritation	May cause lesions to skin
Serious eye damage/eye irritation	Eye irritant
Respiratory or skin sensitization	A skin sensitizer
Germ cell mutagenicity	No data available
Carcinogenicity	

IARC	Styrene (CAS #100-42-5) is considered a class 2B suspect human carcinogen. Methyl Methacrylate (CAS # 80-60-6) is not classifiable as a human carcinogen.
ACGIH	Styrene is not classifiable as a carcinogen.
NTP	Styrene is reasonably anticipated to be a human carcinogen.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available

Section 12 Ecological Information

12.1 Toxicity	No data available
12.2 Persistence and degradability	No data available
12.3 Bioaccumulative potential	No data available
12.4 Mobility in soil	No data available
12.5 Results of PBT & vPvB assessment	No data available

Section 13 Disposal Considerations

13.1 Disposal

Use safety containers for disposal. Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, State, and local regulations.

Section 14 Transport Information

DOT: **Shipping Name:** Resin Solution, Flammable
Hazard Class: 3
ID No.: UN 1866
Packing Group: III

IATA: **Shipping Name:** Resin Solution, Flammable
Hazard Class: 3
ID No.: UN 1866
Packing Group: III

IMDG: **Shipping Name:** Resin Solution, Flammable
Hazard Class: 3
ID No.: UN 1866
Packing Group: III

Section 15 Regulatory Information

15.1 US Federal Regulations

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed
RCRA Hazardous Waste Classification (40 CFR 261): Not classified
CERCLA Hazardous Substance (40 CFR 302.4): Listed/unlisted specific per RCRA Sec. 3001
SARA 311/312 Codes: Chronic Health Hazard, Fire Hazard
SARA Toxic Chemical (40 CFR 372.65): No components were identified
TSCA Inventory Status: All ingredients listed on TSCA inventory requirements

15.2 State Regulations

California Proposition 65: None found

Materials on the New Jersey Right to Know List: Styrene and Methyl Methacrylate

Materials on the Pennsylvania Right to Know List: Styrene and Methyl Methacrylate

Section 16 Other Information

16.1 Disclaimer

The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict of liability arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

1. Identification

1.1. Product identifier

Trade name: NOROX® MEKP-9

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified: Curing agent (polymer technology)

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 Information : 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
Organic peroxides	Type D	H242
Skin corrosion	Category 1B	H314
Serious eye damage	Category 1	H318
Acute aquatic toxicity	Category 3	H402
Chronic aquatic toxicity	Category 3	H412

2.2. Label elements

Statutory basis: Classification according to Regulation 29CFR 1910.1200

Symbol(s):

Signal word	Danger
Hazard statement	H227 - Combustible liquid H242 - Heating may cause a fire. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statement: Prevention	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220 - Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials. P234 - Keep only in original container. P260 – Do not breathe dust or mist. P264 - Wash skin thoroughly after handling. P273 - Avoid release to the environment. P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
Precautionary statement: Reaction	P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 - IF INHALED: Remove person to fresh air and keep 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. P310 - Immediately call a POISON CENTER/doctor. P363 - Wash contaminated clothing before reuse. P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish. P391 - Collect spillage.
Precautionary statement: Storage	P403 + P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up. P411 - Store at temperatures not exceeding 38°C (100°F). P420 - Store away from other materials.
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

• **Methyl ethyl ketone peroxide**	32% - 35%	
CAS-No. 1338-23-4		
Flammable liquids		Category 4
Organic peroxides		Type D
Acute toxicity (Oral)		Category 4
Skin corrosion		Category 1B
Serious eye damage		Category 1
• **Dimethyl phthalate**	35% - 60%	
CAS-No. 131-11-3		
Remarks	Not a hazardous substance or mixture.	
• **Phlegmatizer**	6% - 26%	

CAS-No. Proprietary	
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2
• Methyl ethyl ketone 0% - 2%	
CAS-No. 78-93-3	
Flammable liquids	Category 2
Eye irritation	Category 2A
Specific target organ toxicity - single exposure (Central nervous system)	Category 3
• Hydrogen peroxide <= 1%	
CAS-No. 7722-84-1	
Oxidizing liquids	Category 1
Acute toxicity (Oral)	Category 4
Skin corrosion	Category 1A
Serious eye damage	Category 1
Specific target organ toxicity - single exposure (Respiratory system)	Category 3
Chronic aquatic toxicity	Category 3

Other information
This material is classified as hazardous under OSHA regulations.

4. First aid measures

4.1. Description of first aid measures

Inhalation
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Skin contact
Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Eye contact
In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Ingestion
If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide., Dry Chemical combined with peroxide may reignite fire., Light water additives may be particularly effective at extinguishing peroxide fires.

Unsuitable extinguishing media: High volume water jet.

5.2. Special hazards arising from the substance or mixture

The heat of decomposition of the peroxides adds to the heat of the fire. Dry chemical fire extinguishing agent may catalyze the decomposition.

5.3. Advice for firefighters

If dry chemical is used to extinguish a peroxide fire, the extinguished area must be thoroughly wetted down with water to prevent reignition.
As in any fire, wear self-contained positive-pressure breathing apparatus and full protective gear.

Containers near the source of fire should be cooled with a water spray to prevent contents from reaching decomposition temperature.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Wear a self-contained breathing apparatus and appropriate personal protective equipment. (See Section 8 - Exposure Controls/Personal Protection.) Remove all sources of ignition. Ventilate the area.

6.2. Environmental precautions

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

6.3. Methods and material for containment and cleaning up

Dike spill to prevent runoff from entering drains, sewers, streams, etc. Wet spilled material with water and absorb with an inert absorbent material such as perlite, vermiculite, or sand. Sweep up using non-sparking tools and place in a clean polyethylene drum or a polyethylene pail. DO NOT place into a steel container, lined or unlined, as decomposition may occur. Treat any contaminated cardboard packaging as hazardous waste. Wet container with additional water prior to sealing. Use absorbent/absorbent material to solidify liquids. Clean up promptly by sweeping or vacuum. Wear protective equipment, including eye protection, to avoid exposure (see Section 8 for specific handling precautions).

7. Handling and storage

7.1. Precautions for safe handling

Rotate stock using the oldest material first. Avoid contact with skin, eyes and clothing. Use PPE as specified in section 8. Keep containers closed to prevent contamination. Keep away from sources of heat, sparks, or flame. Do not add to hot solvents or monomers as a violent decomposition and/or reaction may result. When using spray equipment, never spray raw peroxide onto curing or into raw resin or flues. Keep peroxide in its original container. DO NOT USE NEAR FOOD OR DRINK. Wash thoroughly after handling. Protect from contamination. Keep tightly sealed in original packing. Risk of decomposition. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage

The stability of peroxide formulations us directly related to the shipping and storage temperature history. Cool storage at 80° F (27°C) or below is recommended for longer shelf life and stability. Prolonged storage at elevated temperatures of 100° F (38°C) and higher will cause product degradation, gassing and potential container rupture which can result in a fire and/or explosion. Store out of direct sunlight in a well ventilated area away from combustible and incompatible material. DO NOT STORE WITH FOOD OR DRINK.
Refer to NFPA 400 Hazardous Materials Code from the National Fire Protection Association for additional storage information.

Further information

Store apart from other dangerous and incompatible substances.
Keep away from direct sunlight.

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

8. Exposure controls/personal protection

8.1. Control parameters

• Methyl ethyl ketone peroxide		
CAS-No.	1338-23-4	
Control parameters	0.2 ppm	Ceiling Limit Value:(ACGIH)
Control parameters	0.2 ppm 1.5 mg/m3	Ceiling Limit Value:(US CA OEL)
• Dimethyl phthalate		
CAS-No.	131-11-3	
Control parameters	5 mg/m3	Time Weighted Average (TWA):(ACGIH)
Control parameters	5 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	5 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
• Methyl ethyl ketone		
CAS-No.	78-93-3	
Control parameters	200 ppm	Time Weighted Average (TWA):(ACGIH)
Control parameters	300 ppm	Short Term Exposure Limit (STEL):(ACGIH)
Control parameters	200 ppm 590 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	200 ppm 590 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
Control parameters	300 ppm 885 mg/m3	Short Term Exposure Limit (STEL):(US CA OEL)
• Hydrogen peroxide		
CAS-No.	7722-84-1	
Control parameters	1 ppm	Time Weighted Average (TWA):(ACGIH)
Control parameters	1 ppm 1.4 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	1 ppm 1.4 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)

8.2. Exposure controls

Engineering measures

Local exhaust and mechanical ventilation recommended.

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

Wear protective gloves made of the following materials:.
solvent-resistant gloves (butyl-rubber)
nitrile rubber
Neoprene gloves
Skin should be washed after contact.

Eye protection

Use chemical splash goggles or face shield.

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.

Hygiene measures

Do not eat, drink or smoke during use.
Wash hands before breaks and immediately after handling the product.

Protective measures

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

physical state	liquid
Colour	Water-white.
Form	liquid
Odour	slight
Odour Threshold	No data available
pH	not applicable
Melting point/range	no data available
Boiling point/range	not determined
Flash point	> 76 °C (Seta closed cup)
Evaporation rate	not determined
Flammability (solid, gas)	not applicable
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Relative vapour density	> 1
Relative density	1.1
Water solubility	soluble

Solubility/qualitative	no data available
Partition coefficient (n-octanol/water)	no data available
Autoignition temperature	no data available
Thermal decomposition	> 60 °C
Viscosity, dynamic	no data available
Viscosity, kinematic	not determined

9.2. Other information

peroxides	The substance or mixture is an organic peroxide classified as type D.
SADT	SADT > 60 °C

10. Stability and reactivity

10.1. Reactivity
Stable under recommended storage conditions.

10.2. Chemical stability
Contact with incompatible substances can cause disintegration at or below SADT.

10.3. Possibility of hazardous reactions

Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapors may form explosive mixtures with air.

10.4. Conditions to avoid
Keep away from heat and sources of ignition.
Exposure to sunlight.
Prolonged storage above 100°F (38°). Storage above SADT. Storage near flammable or combustible material.

10.5. Incompatible materials
Keep away from strong acids, bases, heavy metals, salts, reducing agents and accelerators. Contaminants (e.g. rust, dust, ash). Combustible materials., Risk of decomposition. Dimethylaniline, cobalt napthenate and other promoters, accelerators, reducing agents, or any hot material.

10.6. Hazardous decomposition products
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke)., Irritant, caustic, flammable, noxious/toxic gases and vapors can develop in the case of fire and decomposition., Acrid smoke and irritating fumes.

11. Toxicological information

11.1. Information on toxicological effects

No toxicological studies are available on the mixture.

carcinogenicity assessment	NTP: No component of this product present at levels greater than or equal

to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Toxicological information on components

Methyl ethyl ketone peroxide

Acute oral toxicity	LD50 Oral Rat(male): 1017 mg/kg
Skin irritation	Causes severe skin burns and eye damage. Causes burns.
Eye irritation	Causes serious eye damage. Risk of serious damage to eyes.

Dimethyl phthalate

Acute oral toxicity	LD50 Oral Rat: 8200 mg/kg
Acute inhalation toxicity	LC50 : 10.4 mg/l / 6 h Assessment: H332: Harmful if inhaled.
Acute dermal toxicity	LD50 Dermal Rat: > 12000 mg/kg
Skin irritation	No skin irritation
Eye irritation	No eye irritation
Sensitization	Not sensitizing.

Phlegmatizer

Acute oral toxicity	LD50 Oral Rat(female): > 2000 mg/kg
Acute inhalation toxicity	LCLo Rat: > 0.12 mg/l / 6 h
Acute dermal toxicity	LD50 Dermal Rat(male/female): > 2000 mg/kg
Skin irritation	No skin irritation
Eye irritation	No eye irritation

Hydrogen peroxide

Acute oral toxicity	LD50 Oral Rat(male): 1026 mg/kg Test substance: Hydrogen peroxide >= 50%
	LD50 Oral Rat(female): 693.7 mg/kg Test substance: Hydrogen peroxide >= 50%

Acute inhalation toxicity	Assessment:	Harmful if inhaled.
Acute dermal toxicity	LD50 Dermal Rat(male and female): > 2000 mg/kg	
Skin irritation	corrosive	
Eye irritation	corrosive	
Sensitization	Not sensitizing.	
Assessment of STOT single exposure	Assessment:	May cause respiratory irritation.

Methyl ethyl ketone

Acute oral toxicity	LD50 Oral Rat: 2737 mg/kg	
Acute inhalation toxicity	LC50 Rat: 23500 mg/l / 8 h	
Acute dermal toxicity	LD50 Rabbit: 6480 mg/kg	
Eye irritation	Irritating to eyes. irritating	
Assessment of STOT single exposure	Target Organs: Assessment:	Central nervous system May cause drowsiness or dizziness.
Mutagenicity assessment	This product may cause mutagenic effects.	

12. Ecological information

12.1. Toxicity

Toxicity to fish	There is no data available for this product.
Toxicity in aquatic invertebrates	No data is available on the product itself.
Toxicity to algae	No data is available on the product itself.

12.2. Persistence and degradability

Biodegradability	no data available

12.3. Bioaccumulative potential

Bioaccumulation	no data available

12.4. Mobility in soil

Mobility	No data available

12.5. Other adverse effects

Further Information Avoid release to the environment.

13. Disposal considerations

13.1. Waste treatment methods

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

D.O.T. Road/Rail

14.1.	UN number:	UN 3105
14.2.	UN proper shipping name:	Organic peroxide type D, liquid(Methyl ethyl ketone peroxide <= 45%)
14.3.	Transport hazard class(es):	5.2
14.4.	Packing group:	II
14.5.	Environmental hazards (Marine pollutant):	--
14.6.	Special precautions for user:	No

Air transport ICAO-TI/IATA-DGR

14.1.	UN number:	UN 3105
14.2.	UN proper shipping name:	Organic peroxide type D, liquid(Methyl ethyl ketone peroxide <= 45%)
14.3.	Transport hazard class(es):	5.2
14.4.	Packing group:	--
14.5.	Environmental hazards:	--
14.6.	Special precautions for user:	Yes

IATA-C: ERG-Code 5L
Must be protected from direct sunlight and stored away from all sources of heat in a well-ventilated area.

IATA-P: ERG-Code 5L
Must be protected from direct sunlight and stored away from all sources of heat in a well-ventilated area.

Sea transport IMDG-Code/GGVSee (Germany)

14.1.	UN number:	UN 3105
14.2.	UN proper shipping name:	ORGANIC PEROXIDE TYPE D, LIQUID(Methyl ethyl ketone peroxide <= 45%)
14.3.	Transport hazard class(es):	5.2
14.4.	Packing group:	--
14.5.	Environmental hazards (Marine pollutant):	--
14.6.	Special precautions for user:	Yes

EmS: F-J,S-R
"Separated from" acids and alkalis.
Protected from sources of heat.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
for transportapproval see regulatory information

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:

- Dimethyl phthalate
  CAS-No. 131-11-3

CERCLA Reportable Quantities

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

- Methyl ethyl ketone peroxide
  CAS-No. 1338-23-4
  Reportable Quantity 29 lbs

SARA Title III Section 311/312 Hazard Categories

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

- Acute Health Hazard
- Fire Hazard

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:

- None listed

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:

- None listed

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)	listed/registered
• Korea (TCCL)	listed/registered
• Philippines (PICCS)	not listed/registered
• China	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 :	3
Flammability :	2
Physical Hazard :	2

NFPA Ratings

Health :	3
Flammability :	2
Reactivity :	2

16. Other information

Further information

Revision date 12/18/2014

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.

Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygenists
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
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization