



# MATERIAL SAFETY DATA SHEET



Responsible Care®  
Good Chemistry at Work

## NOROX® MEKP-9

### SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME	NOROX® MEKP-9	TELEPHONE	(626) 334-2908
MANUFACTURER	Norac, Inc.	CHEMTREC (24hr)	1-800-424-9300
ADDRESS	405 S. Motor Ave., Azusa, CA 91702	CAS NO.	See Section II
CHEMICAL NAME	Methyl Ethyl Ketone Peroxide (MEKP)	CHEMICAL FORMULA	Mixture
CHEMICAL FAMILY	Organic Peroxide - Ketone Peroxide		

### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	%
Methyl Ethyl Ketone Peroxide	1338-23-4	34
Dimethyl Phthalate	131-11-3	43
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	20
Hydrogen Peroxide	7722-84-1	01
Methyl Ethyl Ketone	78-93-3	02
Water	7732-18-5	01

### SECTION 3 - HAZARD IDENTIFICATION OF THE PREPARATION

PHYSICAL HAZARDS	Organic Peroxide. Decomposition
HEALTH HAZARDS	Severe Irritant
EXPOSURE LIMITS	The ACGIH Ceiling STEL is 1.5 mg/m <sup>3</sup> (0.2 ppm) for Methyl Ethyl Ketone Peroxide.
ROUTES OF EXPOSURE	
Skin Contact	Severe skin irritant, causes redness, blistering, and edema.
Eye Contact	Eye contact causes severe corrosion and may cause blindness.
Ingestion	Human systemic effects by ingestion: changes in structure or function of esophagus, nausea, or vomiting, and other gastrointestinal effects.
Inhalation	Moderately toxic by inhalation.
EFFECTS OF OVER-EXPOSURE	Prolonged inhalation of vapors may cause mucous membrane irritation and vertigo. There are no known medical conditions, which are recognized as being aggravated by exposure.

### SECTION 4 - FIRST-AID MEASURES

Skin	Immediately remove any contaminated clothing. Wash contaminated area thoroughly with soap and copious amounts of water for at least 15 minutes. If irritation or adverse symptoms develop seek medical attention.
Eyes	Remove any contact lenses at once. Flush eyes with water for at least 15 minutes. Ensure adequate flushing by separating the eyelids with fingers. If irritation or adverse symptoms develop seek medical attention.
Ingestion	<b>Do Not</b> induce vomiting. Drink plenty of water. Immediately call a physician. For aid to physician, suggest local Poison Control Center.
Inhalation	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	>200°F (93°C) C.O.C
FLAMMABLE LIMITS	Unknown
AUTOIGNITION POINT	Unknown
EXTINGUISHING MEDIA	Water from a safe distance – preferably with a fog nozzle. In case of very small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective. Dry chemical combined with MEKP formulations may re-ignite. Light water additives may be particularly effective at extinguishing MEKP fires.

**NOROX<sup>®</sup> MEKP-9****SPECIAL FIRE FIGHTING PROCEDURES**

Firemen should be equipped with protective clothing and SCBA's. In case of fire near storage area, cool the containers with water spray. If dry chemical is used to extinguish an MEKP fire, the extinguished area must be thoroughly wetted down with water to prevent re-ignition.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

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

**SECTION 6 - ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN EVENT OF SPILL OR RELEASE**

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 a decomposition may occur.** Treat any contaminated cardboard packaging as hazardous waste. **Wet container contents with additional water prior to sealing.**

**SECTION 7 - HANDLING AND STORAGE****HANDLING**

Keep containers closed to prevent contamination. Rotate stock using the oldest material first. The activity and stability of MEKP is directly related to the shipping and storage temperature history. Cool storage at 80°F or below is recommended for longer shelf life and stability. Prolonged storage at elevated temperatures of 100°F and higher will cause product degradation, gassing and potential container rupture which can result in a fire and/or explosion.

**STORAGE**

MEKP should never be added to hot solvents or monomers as a violent decomposition and/or reaction may result. When using spray equipment, never spray raw MEKP onto curing or into raw resin or flues. Keep MEKP in its original container. **DO NOT STORE WITH FOOD OR DRINK. DO NOT USE NEAR FOOD OR DRINK.**

**OTHER PRECAUTIONS**

Unmixed, uncontaminated material, remaining at the end of the day, shall be returned to a proper organic peroxide storage area<sup>1</sup>. Under no circumstances should material be returned to the original container.<sup>2</sup>

**SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION****VENTILATION**

Mechanical, general.

**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.

**EYE PROTECTION**

Safety goggles recommended. Permanent eyewash is highly recommended.

**HAND PROTECTION**

Protective gloves recommended, solvent resistant, such as butyl rubber, nitrile or neoprene.

**OTHER**

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

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES****APPEARANCE AND ODOR:**

Water white liquid with a slight odor.

**BOILING POINT:**

Unknown

**SPECIFIC GRAVITY:**

1.1

**VAPOR PRESSURE:**

Unknown

**FLASH POINT:**

>200°F (93°C) C.O.C

**VAPOR DENSITY:**

> 1

**FLAMMABLE LIMITS:**

Unknown

**EVAPORATION RATE:**

Unknown

**SADT:**

>60°C (140°F)

**% VOLATILE BY VOLUME:**

Unknown

**pH:**

Not applicable

**SOLUBILITY IN WATER:**

Slightly soluble in water.

<sup>1</sup> See CCR Title 8 Section 5461, NFPA 432, and UFC (91) Sec. 80.307.

<sup>2</sup> See NFPA 14-3

# NOROX<sup>®</sup> MEKP-9

## SECTION 10 - STABILITY AND REACTIVITY

<b>STABILITY</b>	Stable when kept in original, closed container, out of direct sunlight at temperatures below 80°F (27°C).
<b>CONDITIONS TO AVOID</b>	Contamination. Direct sunlight. Open flames. Prolonged storage above 100°F (38°C). Storage above SADT. Storage near flammable or combustible materials.
<b>MATERIALS TO AVOID</b>	Dimethylaniline, cobalt naphthenate and other promoters, promoted resins, accelerators, oxidizing and reducing agents, strong acids, bases, metals, metal alloys and salts, sulfur compounds, amines or any hot material.
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Decomposition products are flammable. Acrid smoke and irritating fumes.
<b>HAZARDOUS POLYMERIZATION</b>	Will not occur.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Methyl Ethyl Ketone Peroxide

#### Hazard Data:

**Inhalation:** Rat--LC<sub>50</sub>: 200 ppm/4 hr, lung, thorax, respiration, or dyspnea; Mouse--LC<sub>50</sub>: 170 ppm/4 hr, lung, thorax, respiration, or dyspnea.

**Intraperitoneal:** Rat--LD<sub>50</sub>: 65 mg/kg, behavioral, muscle weakness behavioral, ataxia.

**Oral:** Rat--LD<sub>50</sub>: 484 mg/kg; Mouse--LD<sub>50</sub>: 470 mg/kg; Human--TD<sub>L0</sub>: 480 mg/kg, changes in structure or function of esophagus gastrointestinal, nausea or vomiting gastrointestinal.

**Skin:** Rabbit-- LD<sub>50</sub>: 500 mg.

### Dimethyl Phthalate

#### Hazard Data:

**Inhalation:** Cat--LC<sub>L0</sub>: 9300 mg/m<sup>3</sup>/6.5 hr.

**Intraperitoneal:** Mouse--LD<sub>50</sub>: 1380 mg/kg.

**Oral:** Rat & Mouse--LD<sub>50</sub>: 6800 mg/kg, somnolence behavioral, withdrawal nutritional and gross metabolic, weight loss or decreased weight gain; Dog--LD: >1400 mg/kg; Rabbit--LD<sub>50</sub>: 4400 uL/kg.

**Subcutaneous:** Mouse--LD<sub>L0</sub>: 6500 mg/kg, dyspnea lung, thorax, respiration, or cyanosis.

### 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate

#### Hazard Data:

**Oral:** Rat--LD<sub>50</sub>: >3200 mg/kg

### Hydrogen Peroxide

#### Hazard Data:

**Inhalation:** Mouse--LC<sub>L0</sub>: 227 ppm; Rat--TC<sub>L0</sub>: 67 ppm/6hr/6W-1, dermatitis, irritative of the skin.

**Intraperitoneal:** Mouse--LD<sub>50</sub>: 880 mg/kg.

**Intravenous:** Rabbit--LD<sub>50</sub>: 15 gm/kg, behavioral, convulsions or effect on seizure threshold.

**Oral:** Rat--LD<sub>50</sub>: 376 mg/kg, gastrointestinal, peritonitis blood, pigmented or nucleated red blood cells; Mouse--LD<sub>50</sub>: 2 mg/kg.

**Subcutaneous:** Rat--LD<sub>50</sub>: 620 mg/kg; Mouse--LD<sub>50</sub>: 1072 mg/kg.

**Skin:** Rat--LD<sub>50</sub>: 4060 mg/kg, lung, thorax, respiration, or pulmonary emboli; Rabbit--LD<sub>L0</sub>: 500 mg/kg, behavioral, convulsions or effect on seizure threshold.

### Methyl Ethyl Ketone

#### Hazard Data:

**Eye:** Human: 350 ppm.

**Inhalation:** Rat--LC<sub>50</sub>: 23500 mg/m<sup>3</sup>/8hr.

**Intraperitoneal:** Rat--LD<sub>50</sub>: 607 mg/kg; Mouse--LD<sub>50</sub>: 616 mg/kg.

**Oral:** Rat--LD<sub>50</sub>: 2737 mg/kg; Mouse--LD<sub>50</sub>: 4050 mg/kg.

**Skin:** Rabbit--LD<sub>50</sub>: 6480 mg/kg.

## SECTION 12 - ECOLOGICAL INFORMATION

No data is available on the preparation itself. The product should be prevented from entering drains, sewers, streams, etc.

**Ecotoxicity:** Methyl ethyl ketone peroxide: EC<sub>50</sub> (Guppy), 44.2 mg/L/96 hr; EC<sub>50</sub> (alga), 42,700 ug/L/96 hr.

**Environmental Fate:** Methyl ethyl ketone peroxide (MEKP) was evaluated for biodegradability in a closed bottle system and was reported to be readily biodegradable. An EC<sub>50</sub> of 16mg MEKP/L activated sludge was reported in an activated sludge respiration inhibition test.

**NOROX<sup>®</sup> MEKP-9****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.

**SECTION 14 - TRANSPORT INFORMATION**

**DOT Shipping Name:** ORGANIC PEROXIDE TYPE D, LIQUID,  
(METHYL ETHYL KETONE PEROXIDE, ≤45%)

**DOT Hazard Class:** 5.2

**UN/NA ID No.:** UN3105

**DOT Packing Group:** PG II

**DOT RQ:** RQ

**Labels:** 5.2 (Organic Peroxide)

**2000 ERG GUIDE NO.:** 145

**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>
Dimethyl Phthalate	131-11-3	43
Methyl Ethyl Ketone	78-93-3	02

**Reportable Quantity**

2-Butanone Peroxide (MEKP): 10 lbs (4.54 kg)

**Australian Inventory of Chemical Substances (AICS)**

The ingredients in this product are listed in the Australian AICS Inventory.

**Canadian Domestic Substances List (DSL)**

The ingredients in this product are listed in the Canadian DSL Inventory.

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

The ingredients in this product are listed in the European EINECS Inventory.

**TSCA Status**

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

**Status of Carcinogenicity**

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

**SECTION 16 - OTHER INFORMATION****VOC Information**

Using ASTM Test Method D-2369-87, but at 40°C (since MEKP decomposes rapidly above 100°C and is not a VOC), MEKP-9 contains 2.4% VOC, by weight, or 27 grams per liter. For more information call Norac.

**NFPA 432 Organic Peroxide Classification**

Class III

**NFPA 704 Rating**

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
3	2	2

**HMIS Rating**

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
3	2	2

**MSDS Reference:** MEKP-9 0108.5

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