MATERIAL SAFETY DATA SHEET

NOROX® MEKP-925

Syrgis Performance Initiators, Inc.

Helena, AR

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME	**NOROX® MEKP-925**	**TELEPHONE**	870-572-2935
MANUFACTURER	Syrgis Performance Initiators, Inc.	**CHEMTREC (24hr) (USA)**	800-424-9300
ADDRESS	334 Phillips 311 Rd., Helena, AR 72342	**(Maritime/International)**	703-527-3887
CHEMICAL NAME	Methyl Ethyl Ketone Peroxide (MEKP)	**CAS NO.**	See Section 2
CHEMICAL FAMILY	Organic Peroxide - Ketone Peroxide	**CHEMICAL FORMULA**	Mixture

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	%
Methyl Ethyl Ketone Peroxide	1338-23-4	32 - 35
Dimethyl Phthalate	131-11-3	35 - 60
Phlegmatizer	Proprietary	6 - 26
Hydrogen Peroxide	7722-84-1	1
Methyl Ethyl Ketone	78-93-3	0 - 2
Water	7732-18-5	1

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^3 (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	**Do Not** 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	Not established.
AUTOIGNITION POINT	Not established.
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.
SPECIAL FIRE FIGHTING PROCEDURES	Firefighters 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	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 MEKP onto curing or into raw resin or flues. Keep MEKP in its original container. DO NOT USE NEAR FOOD OR DRINK. Wash thoroughly after handling.
STORAGE	The stability of MEKP formulations 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. Store out of direct sunlight in a well ventilated area away from combustible and incompatible materials. DO NOT STORE WITH FOOD OR DRINK. Refer to NFPA 400 Hazardous Materials Code from the National Fire Protection Association for additional storage information.
OTHER PRECAUTIONS	Unmixed, uncontaminated material, remaining at the end of the day, shall be returned to a proper organic peroxide storage area. Under no circumstances should material be returned to the original container.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

VENTILATION	Mechanical, general.
RESPIRATORY PROTECTION	If airborne concentrations are expected to exceed acceptable levels wear a NIOSH 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 exits.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Water white liquid with a slight odor.		
BOILING POINT:	Not established.	**SPECIFIC GRAVITY:**	1.1
VAPOR PRESSURE:	Not established.	**FLASH POINT:**	>200°F (93°C) C.O.C.
VAPOR DENSITY:	> 1	**FLAMMABLE LIMITS:**	Not established.
EVAPORATION RATE:	Not established.	**SADT:**	>60°C (140°F)
% VOLATILE BY VOLUME:	Not established.	**pH:**	Not applicable.
SOLUBILITY IN WATER:	Slightly soluble in water.		

SECTION 10 - STABILITY AND REACTIVITY

STABILITY	Stable when kept in original, closed container, out of direct sunlight at temperatures below 80°F (27°C).
CONDITIONS TO AVOID	Contamination. Direct sunlight. Open flames. Prolonged storage above 100°F (38°C). Storage above SADT. Storage near flammable or combustible materials.
MATERIALS TO AVOID	Dimethylaniline, cobalt napthenate 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.
HAZARDOUS DECOMPOSITION PRODUCTS	Decomposition products are flammable. Acrid smoke and irritating fumes.
HAZARDOUS POLYMERIZATION	Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Methyl Ethyl Ketone Peroxide

Hazard Data:

Inhalation: Rat--LC_{50}: 200 ppm/4 hr, lung, thorax, respiration, or dyspnea; Mouse--LC_{50}: 170 ppm/4 hr, lung, thorax, respiration, or dyspnea.

Intraperitoneal: Rat--LD_{50}: 65 mg/kg, behavioral, muscle weakness behavioral, ataxia.

Oral: Rat--LD_{50}: 484 mg/kg; Mouse--LD_{50}: 470 mg/kg; Human--TD_{Lo}: 480 mg/kg, changes in structure or function of esophagus gastrointestinal, nausea or vomiting gastrointestinal.

Skin: Rabbit--LD_{50}: 500 mg.

Dimethyl Phthalate

Hazard Data:

Inhalation: Cat--$LC_{Lo:}$ 9300 mg/m^3/6.5 hr.

Intraperitoneal: Mouse--LD_{50}: 1380 mg/kg.

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

Subcutaneous: Mouse--LD_{Lo}: 6500 mg/kg, dyspnea lung, thorax, respiration, or cyanosis.

Proprietary Phlegmatizer

Hazard Data:

Eye: Rabbit: 93 mg, severe.

Inhalation: Human--TC_{Lo}: 50mg/kg, eye effects, nose effects, and pulmonary system effects.

Intraperitoneal: Rat--LD_{Lo}: 1500mg/kg; Mouse--LD_{50}: 1299 mg/kg.

Oral: Rat--LD_{50}: >3200 mg/kg.

Skin: Rabbit: 456 mg/24H, moderate; Rabbit--LD_{50}: 8560 mg/kg.

Hydrogen Peroxide

Hazard Data:

Inhalation: Mouse--LC_{Lo}: 227 ppm; Rat--TC_{Lo}: 67 ppm/6hr/6W-1, dermatitis, irritative of the skin.

Intraperitoneal: Mouse--LD_{50}: 880 mg/kg.

Intravenous: Rabbit--LD_{50}: 15 gm/kg, behavioral, convulsions or effect on seizure threshold.

Oral: Rat--LD_{50}: 376 mg/kg, gastrointestinal, peritonitis blood, pigmented or nucleated red blood cells; Mouse--LD_{50}: 2 mg/kg.

Subcutaneous: Rat--LD_{50}: 620 mg/kg; Mouse--LD_{50}: 1072 mg/kg.

Skin: Rat--LD_{50}: 4060 mg/kg, lung, thorax, respiration, or pulmonary emboli; Rabbit--LD_{Lo}: 500 mg/kg, behavioral, convulsions or effect on seizure threshold.

Methyl Ethyl Ketone

Hazard Data:

Eye: Human: 350 ppm.

Inhalation: Rat--LC_{50}: 23500 mg/m^3/8hr.

Intraperitoneal: Rat--LD_{50}: 607 mg/kg; Mouse--LD_{50}: 616 mg/kg.

Oral: Rat--LD_{50}: 2737 mg/kg; Mouse--LD_{50}: 4050 mg/kg.

Skin: Rabbit--LD_{50}: 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_{50} (Guppy), 44.2 mg/L/96 hr; EC_{50} (alga), 42,700 µg/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_{50} of 16mg MEKP/L activated sludge was reported in an activated sludge respiration inhibition test.

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 (if shipping container is greater than 29.4 lbs)
Labels:	5.2 (Organic Peroxide)
2008 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.

Chemical Name	CAS Number	Percent
Dimethyl Phthalate	131-11-3	35 - 60
Methyl Ethyl Ketone	78-93-3	0 - 2

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.

Chinese Inventory of Existing Chemical Substances Manufactured or Imported in China (IECSC)
The ingredients in this product are listed in the Chinese IECSC Inventory.

European Inventory of Existing Commercial Chemical Substances (EINECS)
The ingredients in this product are listed in the European EINECS Inventory.

Japanese Exiting and New Chemical Substances (ENCS)
The ingredients in this product are listed in the Japanese ENCS Inventory.

Korean Existing Chemicals List (ECL)
The ingredients in this product are listed in the Korean ECL Inventory.

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

Status of Carcinogicity
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-925 contains 5.0% VOC, by weight, or 55 grams per liter. For more information call Syrgis Performance Initiators, Inc.

NFPA 400 Organic Peroxide Classification
Class III

NFPA 704 Rating			HMIS Rating		
Health	Flammability	Reactivity	Health	Flammability	Reactivity
3	2	2	3	2	2

MSDS Reference: MEKP-925 MSDS 1108.doc

MSDS Review Date: 8/23/2011