Safety Data Sheet

1. Product and company identification

Product name	FlexKrete 102, Part A
MSDS Number	300000014503
Product Type	Proprietary Polymer
Product use	Industrial use.
Manufacturer, **Importer**, **Supplier**	FlexKrete Technologies 881 N. Louisiana Dr. Celina, TX 75009 info@flexKrete.com
Print date	12-DEC-2014
Telephone	**For Emergency Transportation Information** Brandon Rice--360-326-5468 For additional health and safety or regulatory information, call 1-800-348-8808

2. Hazards identification

Form	Viscous liquid.
Odor	aromatic.
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	WARNING ! FLAMMABLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE MIXTURES WITH AIR. HARMFUL IN CONTACT WITH SKIN OR IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

Potential acute health effects

Inhalation	Irritating to respiratory system.
Ingestion	Harmful if swallowed.
Skin	Harmful in contact with skin. Irritating to skin.
Eyes	Irritating to eyes.

Potential chronic health effects

Chronic effects	Contains material that may cause target organ damage, based on animal data.

Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Target organs	Contains material which causes damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS), Review Section 2 and 11 for any additional assessments.

Over-exposure signs/symptoms

Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing,
Ingestion	No specific data.
Skin	Adverse symptoms may include the following: irritation, redness,
Eyes	Adverse symptoms may include the following: pain or irritation, watering, redness,
Medical conditions aggravated by over-exposure	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

3. Composition/Information on ingredients

Ingredient name	CAS number	WT %
Benzene, ethenylmethyl-	25013-15-4	**30.0 - 50.0**
Resin Component	68526-56-7	**30.0 - 40.0**
Resin Component	77-73-6	**30.0 - 40.0**

*** Any applicable Canadian trade secret numbers will be listed in Section 15.*

4. First aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation	Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If

	unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first aid personnel	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Flammability of the product	Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
Extinguishing media	
Suitable	Use dry chemical, CO2, water spray (fog) or foam.
Not suitable	Do not use water jet.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Hazardous combustion products	Decomposition products may include the following materials: carbon oxides,
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special Remarks on Explosion Hazards	Liquid and vapor may cause a flash fire or ignite explosively. Vapor is heavier than air and may settle in low places or spread long distances to a source of ignition and flashback. Explosive atmospheres may linger. Closed containers can rupture and release toxic vapors or decomposition products.

6. Accidental release measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Follow US NFPA 30, "Flammable & Combustible Liquids Code", or other national, state and local codes on safe handling of flammable liquids. Train workers in the recognition and prevention of hazards associated with the storage, handling and transfer of flammable liquids in the plant. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Store in an area designated for storage of flammable liquids (See NFPA 30 and OSHA 29 CFR 1910.106). Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient name	**Occupational exposure limits**
Benzene, ethenylmethyl-	**ACGIH TLV 8-hr TWA** 242 mg/m3 50 ppm **ACGIH TLV STEL (15 min)** 483 mg/m3 100 ppm **OSHA PEL 8-hr TWA** 480 mg/m3 100 ppm

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Engineering measures	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eyes	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary

to reduce emissions to acceptable levels.

9. Physical and chemical properties

Form	Viscous liquid.
Flash point	141°F)
Flammable limits	
Lower:	Not available
Upper:	Not available
Color	Gray or amber
Odor	aromatic.
pH	Not available
Boiling point	Not available
Relative density	1.15 - 1.174
Viscosity	Dynamic- 500 - 600 mPa·s
Solubility	Not available
Evaporation rate	Not available

10. Stability and reactivity

Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Materials to avoid	Reactive or incompatible with the following materials: oxidizing materials,
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Acute toxicity

Ingredient name

Benzene, ethenylmethyl-

LD50	Oral	Rat	2,255 mg/kg
LD50	Oral	Mouse	3,160 mg/kg
LC50	Inhalation	Mouse	3.02 mg/l/4 h

Other Toxicological Information

Carcinogenicity

Classification

Ingredient name

Benzene, ethenylmethyl-

ACGIH	Not classifiable as to its carcinogenicity to humans.
IARC	IARC Group 3, not classifiable as to carcinogenicity to humans
NTP	Not listed
OSHA	Not regulated
EEC	Not classified

12. Ecological information

Environmental effects

No known significant effects or critical hazards.

Other adverse effects

No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International transport regulations

Regulatory information	UN/NA number	Proper shipping name	Classes/*PG	Reportable Quantity (RQ)
CFR	1866	Not dangerous goods		
TDG		Not dangerous goods		
IMO/IMDG	1866	RESIN SOLUTION	Class 3 III	
IATA (Cargo)	1866	RESIN SOLUTION	Class 3 III	

*PG : Packing group

15. Regulatory information

US regulations

HCS Classification Combustible liquid, irritating material, target organ effects

U.S. Federal regulations

SARA 311/312 Classification Immediate (acute) health hazard, Delayed (chronic) health hazard, Fire hazard

SARA 313 - Supplier Notification
This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.
Hexanoic acid, 2-ethyl-, cobalt(2+) salt **-** 136-52-7 (0.19%),

SARA 302 Extremely Hazardous Substances None required.

State regulations

Massachusetts RTK Substances The following components are listed: Benzene, ethenylmethyl-,

New Jersey RTK Hazardous Substances The following components are listed: Benzene, ethenylmethyl-,

Pennsylvania RTK Hazardous Substances The following components are listed: Benzene, ethenylmethyl-,

California Prop. 65: None required.

Canada

WHMIS (Canada) Class B-3: Combustible liquid with a flash point between 37.8ºC (100ºF) and 93.3ºC (200ºF).
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists **Canadian NPRI:** None required.

International regulations

Chemical inventories Europe inventory All components are listed or exempted.
Japan inventory. All components are listed or exempted.
China inventory (IECSC) All components are listed or exempted.
Australia inventory (AICS) All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC) Not determined.
Philippines inventory (PICCS) All components are listed or exempted.
Korea inventory (KECI) All components are listed or exempted.
Canada inventory All components are listed or exempted.
United States inventory (TSCA 8b) All components are listed or exempted.

16. Other information

Hazardous Material Information System III (U.S.A.)
Health : 2
Flammability: 2
Physical hazards : 0
Chronic : *

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.
The customer is responsible for determining the PPE code for this material.

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Notice to reader

The information provided herein was believed by FlexKrete Technologies to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by FlexKrete are subject to FlexKrete's terms and conditions of sale. FLEXKRETE MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY FLEXKRETE, except that the product shall conform to FlexKrete's specifications. Nothing contained herein constitutes an offer for the sale of any product.

FlexKrete-Part B

SECTION I—GENERAL INFORMATION

MANUFACTURER	The Norac Company, Inc.	EMERGENCY TELEPHONE	(626) 334-2908
ADDRESS	405 S. Motor Ave., Azusa CA 91702	CHEMTREC	1/800/424-9300
PRODUCT NAME	Norox MEKP-9	CAS NO.	See Section II
CHEMICAL NAME	Methyl Ethyl Ketone Peroxide (MEKP)		
CHEMICAL FAMILY	Organic Peroxide	FORMULA	Mixture of many.

SECTION II—HAZARDOUS INGREDIENTS

COMNPONENTS	CAS NO.	%	HAZARD DATA
Methyl Ethyl Ketone Peroxide	1338-23-4	34	Oral—Rat LD,50: 484 mg/kg
Dimethyl Phthalate	131-11-3	43	Oral—Rat LD 50: 6900 mg/kg
Proprietary Phlegmatizer		20	Oral—Rat LD 50: >3200 mg/kg
Hydrogen Peroxide	7722-84-1	01	Skin—Rat LD 50: 4060 mg/kg
Methyl Ethyl Ketone	78-93-3	02	Oral—Rat LD 50: 2737 mg/kg

SECTION III—PHYSICAL DATA

BOILING POINT ºF	Unknown	SPECIFIC GRAVITY (Water-1)	1.1
VAPOR PRESSURE mm Hg.	Unknown	%VOLATILE BY VOLUME	Unknown
VAPOR DENSITY (Air=1)	> 1		
SOLUBILITY IN WATER	Slight	EVAPORATION RATE	Unknown
APPEARANCE AND ODOR	Water white liquid with a slight odor.		

SECTION IV—HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 1.5 mg/m3 For Methyl Ethyl Ketone Peroxides

ROUTES OF EXPOSURE

- Skin Absorption: 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.

EMERGENCY AND FIRST AID PROCEDURES

- Skin: Wash contaminated area thoroughly with soap and water.
- Eyes: Flush eyes with water for 30 minutes and seek medical attention.
- Ingestion: Take large quantities of milk or water and immediately call a physician. For aid to physician, suggest Poison Control Center (213) 222-8086

SECTION V—REACTIVITY DATA

INCOMPATIBILITY (Materials to avoid)	Dimethylaniline, cobalt napthenate and other promoters, accelerators, reducing agents, or any hot material.
STABILITY	Stable when kept in original, closed container, out of direct sunlight at temperatures below 80º F.
HAZARDOUS DECOMPOSITION PRODUCTS	Acrid smoke and irritating fumes.
HAZARDOUS POLYMERIZATION	Will not occur.

SECTION VI—SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	None
VENTILATION	Mechanical, general.
EYE PROTECTION	Safety goggles recommended. A permanent eye wash is highly recommended.
HAND PROTECTION	Protective gloves recommended (solvent resistant).
OTHER	A safety shower is recommended when the risk of a significant exposure exits.

SECTION VII—FIRE AND EXPLOSION DATA

FLASH POINT: (C.O.C.) >200º F (Method Used) FLAMMABLE LIMITS: Unknown

EXTINGUISHING MEDIA	Water from a safe distance-preferable 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-9 fires.
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 chemicals is used to extinguish an MEKP-9 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 VIII—SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN EVENT OF SPILL OR RELEASE	Dike to prevent runoff from entering drains, sewers, streams, etc. and transfer into containers. Spilled material should be swept up with an inert, moist diluent such as perlite, vermiculite, or sand, and placed in a clean polyethylene lined drum or a polyethylene drum.
WASTE DISPOSAL METHOD	Immediately dispose of waste material in accordance with federal, state and local regulations.

SECTION IX—SPECIAL PRECAUTIONS

HANDLING AND STORING	Keep containers closed to prevent contamination. Rotate stock using the oldest material first. Storage at or below 80º F is required to ensure product safety. Prolonged storage at elevated temperatures will result in product degradation. Cooler storage is recommended for longer shelf life.
OTHER PRECAUTIONS	MEKP-9 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-9 onto curing or into raw resin or flues. Keep MEKP-9 in its original container. DO NOT STORE WITH FOOD OR DRINK. DO NOT USE NEAR FOOD OR DRINK.

SECTION X—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

VOC Information

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

TSCA Status

1. See CCR Title 8 Section 5461, NFPA 432, and UFC (91) Sec. 80.307.
2. See NFPA 14-3

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

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

NFPA 704 Rating

Health	Flammability	Reactivity
3	2	2

SECTION XI—SHIPPING DESCRIPTION

ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL DETONE PEROXIDE, <45%)
CLASS 5.2, UN3105, PG II, RQ