

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: SIGN-SAFE

Chemical family: Mixture of amide solvent, surfactants, alcohol and glycol.

Product use: Specialty Graffiti Remover for Signage

Supplier name and address:

BK Enterprises

3970 Youngfield Street

Wheat Ridge, CO, U.S.A. 80033

Phone: 303-865-8800 (7:30 AM to 4:30 PM, Monday to Friday, MST)

Emergency Tel.#: CHEM-TEL – North America 1-800- 255-3924 or Worldwide Intl. + 01- 813-248-0585

SECTION 2 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear to pale yellow liquid, mild, lemon-like odor.

Warning! Combustible liquid and vapor. Contact with extreme heat, flame and other ignition sources may cause fire. Harmful if inhaled, swallowed or absorbed through the skin. Causes eye and skin irritation. May cause allergic skin reaction. May cause respiratory tract irritation. Could cause headache, drowsiness or other effects to the central nervous system. Contains material which may cause adverse liver and blood system effects. Combustible liquid; must be moderately heated for ignition to occur. Not reactive. Release to the environment may cause harm.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system, liver, blood system, central nervous system.

Routes of exposure: Skin contact, skin absorption, eye contact, inhalation, ingestion.

Signs and symptoms of short-term (acute) exposure:

Inhalation: Harmful if inhaled. Inhalation may cause irritation to the nose, throat and upper respiratory tract.

Inhalation could also cause fatigue, difficulty breathing, headache, nausea, vomiting, other central nervous system effects and blood system effects (red blood cell fragility and hemoglobinuria).

Skin: Direct contact with skin may cause moderate to severe irritation. Product could be absorbed if left on the skin and cause headache, nausea, vomiting, other central nervous system effects and blood system effects (red blood cell fragility and hemoglobinuria).

Eyes: Direct contact with eyes may cause severe irritation and possibly eye injury. Vapors are irritating to the eyes.

Ingestion: If ingested, may cause irritation to the mouth, throat and stomach. Symptoms may include pain, sore throat, vomiting, diarrhea, vomiting, other central nervous system effects and possibly blood system effects (red blood cell fragility and hemoglobinuria). This product may present an aspiration hazard. Aspiration into the lungs following ingestion may cause life-threatening lung injury.

Chronic effects: Repeated or prolonged exposure may result in severe drying, cracking and defatting of the skin (dermatitis). Prolonged or repeated inhalation may cause severe toxicity to the blood system, based on animal data. Prolonged or repeated exposure may cause adverse liver and nervous system effects.

Carcinogenic status: See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards: May cause allergic skin reaction. Possible birth defect hazard. For further information, see TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects: See ECOLOGICAL INFORMATION (Section 12).

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w
Cycloalkane	Proprietary	5-10%
Surfactant	Proprietary	10-30%
Aliphatic Glycol Ether	Proprietary	10-30%
n-Methyl-2-Pyrrolidone	872-50-4	10-30%
Ethanol	64-17-5	30-60%

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 4 — FIRST AID MEASURES

Inhalation: If inhaled, immediately remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention if adverse effect continues after removal to fresh air.

Skin contact: Immediately remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and running water. Obtain medical attention if irritation persists. Launder clothing before reuse.

Eye contact: Immediately flush eyes with running water for a minimum of 15 minutes. Obtain medical attention immediately if adverse effect continues after flushing.

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention immediately. Guard against aspiration into the lungs.

Conditions aggravated by exposure: May aggravate pre-existing skin, eye and respiratory problems.

Recommendations to physicians: Treat symptoms and eliminate overexposure.

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Combustible liquid. This material may ignite when exposed to extreme heat, direct flame and other sources of ignition. Vapors may be heavier than air and may collect in low-lying areas and confined spaces. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Product may float and may re-ignite at the water's surface.

Flammability classification (OSHA 29 CFR 1910.1200): Class IIIA Combustible Liquid.

Flash point: 90°C / 194°F

Auto-ignition temperature: 287°C / 549°F

Oxidizing properties: None known

Lower flammable limit (% by vol.): N/Av

Upper flammable limit (% by vol.): N/Av

Explosion data:

Sensitivity to mechanical impact: May be sensitive to static discharge.

Sensitivity to static discharge: Not sensitive.

Suitable extinguishing media: Use foam, dry chemical, carbon dioxide or water spray / fog. Do not use water jet.

Special fire-fighting procedures/equipment: Firefighters should wear proper protective equipment and respiratory protection as conditions warrant. Move containers from fire area if it can be done without risk. Water spray may be useful in cooling equipment and containers exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.

Hazardous combustion products: Carbon oxides, nitrogen oxides and other irritating fumes and smoke.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers or confined spaces. Dike far ahead of large spills with non-combustible, inert absorbent material.

SECTION 6 — ACCIDENTAL RELEASE MEASURES (Continued)

Spill response/Cleanup: Eliminate all sources of ignition. Ventilate area of release. Stop leak if you can do so without risk. Use non-sparking tools. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand, earth), then place absorbent material into a suitable container for later disposal (see Section 13). Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.

Prohibited materials: None known.

Special spill response procedures: If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).

DOT/CERCLA Reportable quantity (RQ): None reported

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: This material is a combustible, harmful liquid. Wear appropriate protective equipment during handling. Use in a well-ventilated area. Avoid inhalation of vapors. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep away from heat, flame and other sources of ignition. Keep away from acids and other incompatible materials. Use caution when opening cap. Keep container tightly closed when not in use. Assume empty containers contain residues, which are hazardous.

General hygiene considerations: Avoid inhalation of vapors and mists. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when working. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

Storage requirements: Store in a cool, dry, well-ventilated area away from sources of heat, ignition and sunlight. Keep away from incompatibles and flammable materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Containers should be separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Refer to NFPA 30, *Flammable and Combustible Liquids Code*, for additional information on storage. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: Use in well-ventilated area. Local mechanical exhaust / extraction ventilation may be required if used indoors on a continuous basis.

Exposure Limits:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	
Proprietary Surfactant		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Aliphatic Glycol Ether	67		NE	240 (skin) 120 (vacated 1989 PEL)	NE	24 (skin)	NE	700 ppm	DFG MAKs: TWA = 49 (skin) PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C
Proprietary Cycloalkane		NE	NE	NE	NE	NE	NE	NE	DFG MAKs: Danger of Sensitization of the Skin TWA = 110 PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION (Continued)

Exposure Limits (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							OTHER mg/m ³
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	
Ethanol	64-17-5	1800	NE	1900	NE	1900	NE	3000 ppm (based on 10% of LEL)	DFG MAKs: TWA = 900 PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C DFG MAK Germ Cell Mutagen Category: 5
n-Methyl-2-Pyrrolidone	872-50-4	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 82 (vapor) skin PEAK = 2•MAK 15 min. average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C AIHA WEELS: TWA = 10 ppm (skin)

NE = Not Established.

Respiratory protection: Respiratory protection is required if airborne concentrations are above recommended TLVs or are not known. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent U.S. State standards, and the Canadian CSA Standard Z94.4-02, *Selection, Care and Use of Respirators*. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, in emergency situations or when oxygen levels are unknown, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

Hand protection: It is recommended that protective gloves impervious to the material be worn at all times during use. Use triple gloves for spill response. If necessary, refer to U.S. OSHA 29 CFR 1910.138 and appropriate standards of Canada.

Eye / face protection: Use chemical splash goggles when a potential for eye contact exists. A full face shield should be worn when handling more than 1 gallon of product. If necessary, refer to U.S. OSHA 29 CFR 1910.133, the Canadian CSA Standard Z94.3-02, *Industrial Eye and Face Protection*. An eyewash station and safety shower should be made available in the immediate working area.

Skin protection and other protective equipment: Use body protection appropriate for task. An apron, or other impermeable body protection is suggested. Full-body chemical protective clothing is recommended for emergency response procedures. If necessary, refer to the OSHA Technical Manual (Section VII: Personal Protective Equipment), or appropriate Standards of Canada. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136 and the Canadian CSA Standard Z195-02, *Protective Footwear*. An eyewash station and safety shower should be made available in the immediate working area.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical state, odor and appearance: Clear to pale yellow liquid, mild, lemon-like odor.

Specific gravity: 1.01

Volatiles (% by weight): Not established.

Vapor density (Air = 1): Not established.

Evaporation rate (n-Butyl acetate = 1): Not established.

pH: Not established.

Solubility in water: Dispersible.

Vapor pressure (PSIG): Not established.

Boiling point: >329°F / 165°C

Freezing point: N/Av.

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: Stable under the recommended storage and handling conditions prescribed.

Hazardous polymerization: Will not occur.

Conditions to avoid: Avoid sources of heat, flame, and direct sunlight.

Materials to avoid (incompatibles): Acids, bases, strong oxidizing agents.

Hazardous decomposition products: *Combustion:* Carbon oxides, nitrogen oxides. *Hydrolysis:* None known. On exposure to air, product may slowly polymerize and may produce peroxides. This process is accelerated by direct sunlight.

SECTION 11 — TOXICOLOGICAL INFORMATION

Toxicological data: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data for components in 1% concentration or greater. Additional data is available, but is not presented in this MSDS. Contact BK Enterprises for more information.

<u>Ingredients</u>	<u>LC₅₀(4hr) inhalation, rat</u>	<u>LD₅₀ (mg/kg) oral, rat</u>	<u>LD₅₀ (mg/kg) dermal, rabbit</u>
n-Methyl-Pyrrolidone	Not established	3914	8000
Proprietary Aliphatic Glycol Ether	450 ppm	530	400
Ethanol	20,000 ppm / 10 hrs.	7060	Not available.
Proprietary Cycloalkane	Not established	4400	> 5000

Carcinogenicity: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

Proprietary Aliphatic Glycol Ether: ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); EPA-C (Possible Human Carcinogen); EPA-CBD (Cannot Be Determined); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.)

Proprietary Cycloalkane: IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-5 (Substances with carcinogenic and genotoxic effects, the potency of which is considered to be so low that, provided the MAK and BAT values are observed, no significant contribution to human cancer is to be expected.)

Ethanol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); MAK-5 (Substances with carcinogenic and genotoxic effects, the potency of which is considered to be so low that, provided the MAK and BAT values are observed, no significant contribution to human cancer is to be expected.)

None of the remaining ingredients listed are classified by IARC, ACGIH, NTP, MAK, EPA, NIOSH or OSHA as carcinogenic.

Reproductive effects, Teratogenicity, Mutagenicity: This product contains n-Methyl-2-Pyrrolidone. This material may cause embryotoxic and teratogenic effects, based on animal data. These effects were noted following doses which were administered by injection (intraperitoneal), or following doses which were maternally toxic and were administered dermally. This product contains Ethanol, which is a known human reproductive toxin when ingested as alcoholic beverages. No reproductive effects have been reported following Ethanol exposure in the workplace. It is known to cause mutations to germ cells and somatic cells in animals. In addition, this material causes embryotoxicity, fetotoxicity and teratogenicity in animals, in the presence of maternal toxicity.

Sensitization to material: Due to the presence of the Proprietary Cycloalkane this product may cause an allergic skin response (intense itching, swelling and redness) in susceptible individuals; once sensitized contact with very small amount can cause allergic reaction.

Synergistic materials: Not available.

Other important hazards: CNS depression may result from exposure.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicological information: The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.

Chemical fate information: There is no data available on the product itself. The main components of this product are expected to biodegrade by atmospheric, aquatic and ground applications.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Handle according to recommendations listed in Section 7.

Methods of disposal: Dispose in accordance with all applicable federal, state and local regulations. Contact your local, state or federal environmental agency for specific rules.

U.S. RCRA: For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 — TRANSPORTATION INFORMATION

U.S. DOT transportation regulation information: This product is NOT classified as Dangerous Goods under regulations of the U.S. DOT, 49 CFR.

Transport Canada transportation regulation information: This product is NOT classified as Dangerous Goods, per regulations of Transport Canada.

SECTION 15 — REGULATORY INFORMATION

U.S. Federal Information:

TSCA information: All ingredients are listed on the TSCA inventory.

DOT/CERCLA Reportable Quantity (RQ): None reported

SARA TITLE III:

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Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present.

Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute); Delayed (Chronic), Fire. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material may be subject to TSCA notification requirements, since it contains n-Methyl-2-pyrrolidone, a Toxic Chemical constituent above de minimus concentration.

California Proposition 65: The n-Methyl-2-pyrrolidone component (Cyclic Amide) is listed on Proposition 65 as a chemical that can cause developmental harm. The Ethanol component is on the Proposition 65 chemical lists; however, this listing is specifically related to alcoholic beverages and is not applicable to industrial exposure of this material.

CANADIAN FEDERAL REGULATION INFORMATION:

Canadian DSL/NDSL Inventory status: Components of this product are listed on the DSL Inventory.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: No component of this product is on the CEPA Priorities Substances Lists.

Canadian WHMIS classification and symbols:

Class B2: Combustible Liquid

Class D2A/D2B: Material Causing Other Toxic Effects (Toxicity-Irritation-Sensitization)



SECTION 16 — OTHER INFORMATION

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980

NIOSH: National Institute of Occupational Safety and Health

CAS: Chemical Abstract Services

DOT: Department of Transportation

IARC: International Agency for Research on Cancer

N/Av: not applicable

OSHA: Occupational Safety and Health Administration

RCRA: Resource Conservation and Recovery Act

SARA: Superfund Amendments & Reauthorization Act

TSCA: Toxic Substance Control Act

RTECs: Registry of Toxic Effects of Chemical Substances

HSDB: Hazardous Substances Data Bank

CFR: Code of Federal Regulations

EPA: Environmental Protection Agency

MST: Mountain Standard Time

N/Av: not available

NTP: National Toxicology Program

PEL: Permissible Exposure Limit

TLV: Threshold Limit Values

TWA: Time Weighted Average

The information in this MSDS was obtained from sources we believe are reliable. We believe the information was accurate at the time it was compiled. However, no warranty, express or implied, including, without limitation, any warranty of **fitness for a particular purpose or merchantability**, is

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