SAFETY DATA SHEET

NOTICE: Judgment may be based on indirect test and technical literature. The OSHA Hazard Communication Standard only requires SDS's and special labeling for materials defined as "HAZARDOUS"; see 29 CFR 1910.1200 (c). This document may be about a product which is NOT hazardous but is provided as information for our customers. See references for information.

SECTION 1. IDENTIFICATION

Product Identifier: Bio-1
Product Use: Ink and Stain Remover and Degreaser
Manufactured by: Kor-Chem, Inc.
5800 Bucknell Drive
Atlanta, GA 30336

Product Identification # (PIF): 01459
Emergency Telephone #: 1-800-255-3924 ChemTel
General Information #: 404-344-9580
Date Prepared: August 28, 2013
Date Revised: April 11, 2017
Revision: 5

SECTION 2. HAZARD(S) IDENTIFICATION

GHS Hazard Codification



Signal Word: DANGER

Hazard Statement	Category	Code	Hazard Class
Combustible Liquid	4	H227	Flammable Liquid
May be fatal if swallowed and enters airways	1	H304	Aspiration Hazard
Causes skin irritation	2	H315	Skin Irritation
Causes serious eye irritation	2A	H320	Eye Irritation
May cause respiratory irritation	3	H335	STOT: SE, Respiratory Tract Irritation
May cause drowsiness or dizziness	3	H336	STOT, SE; Narcotic effects

Precautionary Measures:

Category	Code	Statement
Prevention	P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
	P261	Avoid breathing fumes/mists/vapors/sprays.
	P264	Wash thoroughly after handling.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
	P331	Do NOT induce vomiting.
	P303+P361+P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
	P352	Wash with soap and water.
	P321	Specific treatments: See Section 4 First Aid Measures.
	P332+P313	If skin irritation occurs: Get medical advice/attention.
	P362	Take off contaminated clothing and wash before reuse.
	P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P312	Call a POISON CENTER or doctor/physician if you feel unwell.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if easy to do so. Continue rinsing.
	P337+P313	If eye irritation persists: Get medical advice/attention.
	P370+P378	In case of fire: Use foam, dry chemical, carbon dioxide fire extinguishers or water spray for extinction.
Storage	P403+P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
	P405	Store locked up.
Disposal	P501	Dispose of contents/container in compliance with all Federal, State/Provincial and local laws and regulations.

Hazards not otherwise classified: Repeated or prolonged exposure may cause dermatitis (drying of skin).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Common Name	CAS #	Concentration Range %
Dimethyl glutarate	None known	1119-40-0	23 – 27
Diethylene glycol monobutyl ether	Glycol ether DB	112-34-5	8 – 12
Propylene carbonate	None known	108-32-7	8 – 12
(2-(2-methoxymethylethoxy) methylethoxy) Propanol	Tripropylene glycol methyl ether	24498-49-1	8 – 12
Dimethyl succinate	None known	203-419-9	6 – 10
Dimethyl adipate	None known	627-93-0	4 – 8
Isobutyl Isobutyrate	IBIB	97-85-8	4 – 8
Ethoxylated alcohols	None known	68439-46-3	2 – 6
Distillates, petroleum, hydrotreated light	None known	64742-47-8	1 – 5

SECTION 4. FIRST AID MEASURES

Eyes: Flush well with water for at least 15 minutes, holding eyelids open. Remove any contact lenses and continue rinsing. If irritation persists, seek medical attention.

Skin or Hair: Remove immediately all contaminated clothing. Rinse skin with water/shower. Wash with soap and water. Launder contaminated clothing before reuse. If irritation develops and persists, seek medical attention.
Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, have a trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration by way of pocket mask equipped with one-way valve or other proper respiratory device – Do NOT use mouth-to-mouth method if victim inhaled material.
Ingestion: Immediately call a POISON CENTER or doctor/physician. DO NOT INDUCE VOMITING – aspiration hazard. If completely conscious and aware, have victim rinse out mouth. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

SECTION 5. FIRE-FIGHTING MEASURES

Flash Point: 146ºF (63ºC)
Flammability: Class IIIA Combustible liquid
Extinguishing Media: Foam, dry chemical, carbon dioxide fire extinguishers, water spray. Do not spray water directly on fire. Use water spray to cool containers.
Specific hazards arising from chemical: Vapors are heavier than air and may travel along the ground to an ignition source. Never use welding or cutting torch on or near drum (even empty) because product can ignite explosively.
Hazardous combustion products: Oxides of carbon and aldehydes.
Firefighting protective equipment: Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.
Sensitivity to static discharge: This product is a Class IIIA Combustible liquid.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment (Section 8). Keep away from heat/sparks/open flames/hot surfaces – No smoking. Ventilate area. Avoid breathing fumes/mists/vapors/sprays. Wash thoroughly after handling.
For Small Spills: Spilled material may be slippery. Avoid dispersal of material and runoff into soil, waterways, drains and sewers. Vapor-suppressing foam may be used to reduce vapors. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Wash walking surfaces with water to reduce slipping hazard. Dispose of contaminated absorbent material in accordance with local, state and federal regulations.
For Large Spills: Large spills cannot occur due to packaging.

SECTION 7. HANDLING AND STORAGE

Handling: Use personal protective equipment (Section 8). Use only outdoors or in a well-ventilated area. Avoid breathing fumes/mists/vapors/sprays. Keep away from heat/sparks/open flames/hot surfaces – No smoking. Vapors are heavier than air and may travel along the ground to an ignition source. Never use welding or cutting torch on or near drum (even empty) because product can ignite explosively. Do not mix with other chemicals unless label instructs otherwise. Empty containers may contain residue and can be dangerous. Do not eat, drink or smoke in work areas. Wash thoroughly after handling.
Storage: Keep away from heat, flame, or sunlight – Keep cool. Keep from freezing. Keep container tightly closed when not in use. Store locked up. Store in a well-ventilated place. Protect from physical damage. Store away from strong oxidizing agents, acids, bases and reducing agents, reactive metals.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient	CAS #	OSHA/PEL	ACGIH/TLV	STEL
Dimethyl glutarate	1119-40-0	Not determined	Not determined	Not determined
Diethylene glycol monobutyl ether	112-34-5	Not determined	10 ppm	Not determined
Propylene carbonate	108-32-7	Not determined	Not determined	Not determined
Tripropylene glycol methyl ether	25498-49-1	Not determined	Not determined	Not determined
Isobutyl Isobutyrate	97-85-8	Not determined	Not determined	Not determined
Dimethyl succinate	203-419-9	Not determined	Not determined	Not determined
Dimethyl adipate	627-93-0	Not determined	Not determined	Not determined
Ethoxylated alcohols	68439-46-3	Not determined	Not determined	Not determined
Distillates, petroleum, hydrotreated light	64742-47-8	5 mg/m3	200 mg/m3	Not determined

Engineering Controls: Provide adequate ventilation. Observe occupational exposure limits and keep the risk of exposure to a minimum.
Personal protective equipment:

Eye: Safety glasses with side shields or splash proof goggles. Wear face shield when handling large amounts.
Skin: Chemical resistant (impervious) gloves. Normal materials handling clothing and boots. Wear apron when handling large amounts.
Respirator: Use only outdoors or in a well ventilated area. Use NIOSH approved protection with organic vapor cartridge of PEL is exceeded or if mists/spays are generated.
Other: Use only outdoors or in a well ventilated area. Do not eat, drink or smoke while handling. Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless to straw, clear liquid	Upper/Lower flammability limits	Not determined
Odor	Bubblegum fragrance	Vapor pressure	Not determned
Odor threshold	Not determined	Vapor density (Air = 1)	Not determined
pH	Not applicable (solvent)	Specific gravity (water = 1.0)	1.010 g/ml
Melting point	Not determined	Solubility	Negligible in water
Freezing point	Not determined	Partition coefficient	Not determined
Boiling point	Not determined	Auto-ignition temperature	Not determined

Flash point	146ºF (63ºC)	Decomposition temperature	Not determined
Evaporation rate (n-butyl acetate=1)	<1	Viscosity	Not determined
Flammability	Class IIIA Combustible	VOC by weight	6% (60.6 g/L)

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions. Stable, but Diethylene glycol monobutyl ether may form peroxides of unknown stability.
Chemical stability: Stable under normal, ambient temperature and conditions.
Possibility of hazardous reactions: Hazardous polymerization will not occur.
Conditions to avoid: Heat, flame and sparks. Keep from freezing. Do not mix with other chemicals unless product information instructs to do so.
Incompatible materials: Avoid strong oxidizing agents, acids, bases and reducing agents, reactive metals.
Hazardous combustion products: Oxides of carbon and aldehydes.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity:

Oral (LD50 Rat): >5000 mg/kg
Dermal (LD50 Rabbit): >5000 mg/kg
Inhalation (LC50 Rat): No data available.

Skin corrosion/irritation: Skin irritant. Symptoms may include skin reddening, swelling and itching. Prolonged/repeated skin exposures can result in dermatitis.
Serious eye damage/irritation: Serious eye irritant. Symptoms may include a burning sensation, tearing, swelling and redness.
Respiratory or skin sensitization: Not classified.
Germ cell mutagenicity: No data available.
Carcinogenicity: NTP/IARC/OSHA Carcinogen: Not listed.
Reproductive toxicity: Not data available.
STOT-single exposure: May cause respiratory irritation. May cause dizziness or drowsiness. Symptoms may include coughing and difficulty breathing.
STOT-repeated exposure: Not classified.
Aspiration hazard: May be fatal if swallowed and enters airways.
Ingestion: Ingesting large amounts may be harmful or fatal. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.
Likely routes of exposure: Eyes, skin and inhalation
Interactive effects: None known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity:

96h LC-50 (fish): 114 mg/l
48h EC-50 (invertebrates): 176 mg/l
72h EC-50 (algae): Not determined.

Persistence and degradability: Readily biodegradable – 71.6% after 28 days (OECD 301D). BOD (mg/g) – Not determined. COD (mg/g) – Not determined.
Bioaccumulative potential: Not determined.
Mobility in soil: Mobile in soil. This product is insoluble in water.
Other adverse effects: None known.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Do not dump into sewers, on the ground or into any waterways. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.
Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied. Do not cut, drill, grind or weld on or near the container.
RCRA: A waste containing this product may have the RCRA hazardous waste no. D001 (Ignitable) (40 CFR 261.22).

SECTION 14. TRANSPORT INFORMATION

United States DOT:

Container of 119 gallons or less:

Combustible Liquid - 49 CFR 173:120 (b)(1): This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less for ground transportation. Exception CFR 173.150(f)(2): Combustible liquids.

Container of 120 gallons or more:

UN/ID No.: NA1993
Proper Shipping Name: Combustible liquid, n.o.s., (Isobutyl Isobutyrate)
Hazard Class: Comb Liq
Packing Group: III

IATA and IMDG:

Not regulated per 49CFR 171.11(d)(3): Flash point above 140ºF (63ºC)
Marine Pollutant (IMDG Code): Not listed (49 CFR 172.101).
Transportation in bulk (IMDG - Annex II of MARPOL 73/78 and IBC Code): Not offered in bulk for transport overseas.

SECTION 15. REGULATORY INFORMATION

TSCA: All components of this product are on the TSCA inventory or are exempt from TSCA inventory requirements under 40 CFR 720.30.

SARA Section 302: The components of this product are either not regulated or regulated, but present in negligible concentrations.
SARA TITLE III Section 311/312:

Immediate (Acute) Health	Yes	Fire Hazard	Yes
Delayed (Chronic) Health	No	Reactive Hazard	No

SARA Title 313: This material contains the following chemical components with known CAS numbers subject to reporting requirements (40 CFR 372): Diethylene glycol monobutyl ether CAS# 112-34-5, percent by weight = 10% (glycol ethers category).
CERCLA: This product does not have a reportable quantity.
United States Right-To-Know: Isobutyl Isobutyrate (CAS #97-85-8) - Pennsylvania, New Jersey. Distillates (petroleum), hydrotreated light CAS# 64742-47-8 - New Jersey & Pennsylvania.
Proposition 65: This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
RCRA: A waste containing this product may have the RCRA hazardous waste no. D001 (Ignitable) (40 CFR 261.22).

SECTION 16. OTHER INFORMATION

Date Prepared: April 11, 2017, vs. #5 – SDS updated to reflect tested flash point.
Hazard Ratings (HMIS): Health 2, Flammability 2, Reactivity 0 (Scale 0 – 4). Personal Protection Rating to be supplied by user based on use conditions.
Carefully read all instructions on label before handling this product.
Keep out of reach of children.
"FOR INDUSTRIAL USE ONLY"

Abbreviation	Full Name/Explanation
ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CNS	Central Nervous System
CFR	Code of Federal Regulations
DOT	Department of Transportation
EC	Effective Concentration
HMIS	Hazardous Material Information System
IARC	International Agency for Research on Cancer
LC	Lethal Concentration
LD	Lethal Dose
NA	Not Applicable
ND	Not Determined
NE	Not Established
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SE	Single Exposure
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
VOC	Volatile Organic Compounds

The information contained herein is based on data available to us and is believed to be correct. We make no warranty, however, expressed or implied regarding the accuracy of these data or the results obtained from the use thereof.
Regulatory Standards: DOT TITLE 49, Code of Federal Regulations 172.101: Parts 100 to 177, Revised 10/1/92.
SUPER FUND AMENDMENTS REAUTHORIZATION ACT OF 1986, TITLE III TOXIC SUBSTANCE CONTROL ACT LIST (TSCA)- INGREDIENTS LISTED. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES NATIONAL TOXICOLOGICAL PROGRAM (NTP) REPORT OF CARCINOGENS INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) MONOGRAPHS, OCCUPATIONAL SAFETY & HEALTH REGULATIONS. CODE OF FED. REGS. FOOD & DRUG, 21 PARTS 170 to 199, Revised 4/1/91, 173.310.