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-4
Product Use: Ink Degradent & Stain Remover
Manufactured by: Kor-Chem, Inc.
5800 Bucknell Drive
Atlanta, GA 30336

Product Identification # (PIF): 01446
Emergency Telephone #: 1-800-255-3924 ChemTel
General Information #: 404-344-9580
Date Prepared: January 2, 2014
Date Revised: February 1, 2018 – version #5

SECTION 2. HAZARD(S) IDENTIFICATION

GHS Hazard Codification



Signal Word: DANGER

Hazard Statement	Category	Code	Hazard Class
Combustible liquid	3	H227	Combustible 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	H319	Eye Irritation
May cause respiratory irritation	3	H335	STOT: SE, Respiratory Tract Irritation
May cause drowsiness or dizziness	3	H336	STOT, Single Exposure; Narcotic effects

Precautionary Measures:

Category	Code	Statement
Prevention	P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
	P233	Keep container tightly closed.
	P240	Ground/bond container and receiving equipment.
	P241	Use explosion-proof equipment.
	P242	Use only non-sparking tools.
	P243	Take precautionary measures against static discharge.
	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.
	P363	Wash contaminated clothing 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.
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 %
Dibasic Ester	DBE	Mixture	75 – 79
2-butyoxyethanol	Ethylene glycol monobutyl ether	111-76-2	8 - 12
1-Methanoxypropan-2-ol	Glycol ether PM	107-98-2	8 – 12

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. Seek medical attention if irritation persists.
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 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. 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: 130°F (54.4°C)
NFPA 30 Flammability: Non Flammable
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. Readily ignited by static discharge.
Hazardous combustion products: Carbon monoxide and carbon dioxide.
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 combustible and readily ignited even by static discharge. Grounding equipment is recommended.

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 with non-sparking tools. Wash walking surfaces with water. 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: Wear personal protection equipment (Section 8). Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces – No smoking. Avoid breathing fumes/mists/vapors/sprays. Use proper bonding and grounding during product transfer as described in document NFPA 77. Use explosion-proof equipment and non-sparking tools. Take precautionary measures against static discharge. 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, reducing agents, chlorates, chlorine, organic amines, aluminum, zinc, tin, copper and their alloys.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient	CAS #	OSHA/PEL	ACGIH/TLV	STEL
Dibasic Ester	Mixture	1.5ppm	Not determined	Not determined
2-butyoxyethanol	111-76-2	50ppm	20ppm	Not established
1-Methoxypropan-2-ol	107-98-2	100 ppm	50 ppm	150 ppm

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. Use face shield when handling large amounts.
Skin: Chemical resistant (impervious) gloves. Normal materials handling clothing and boots. Use apron when handling large amounts.
Respirator: Use NIOSH approved protection with organic vapor cartridge if PEL is exceeded or if vapors/mists/sprays are causing irritation.
Other: Use only in a well ventilated area. Do not eat, drink or smoke while handling. Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Straw-colored, clear liquid	Upper/Lower flammability limits	Not determined
Odor	Cherry	Vapor pressure	Not determined
Odor threshold	Not determined	Vapor density (Air = 1)	>1
pH	Not applicable	Specific gravity (water = 1.0)	1.050 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	130°F (54.4°C)	Decomposition temperature	Not determined
Evaporation rate (n-butyl acetate=1)	>1	Viscosity	Not determined
Flammability	Non flammable	VOC by weight	0%

SECTION 10. STABILITY AND REACTIVITY

Reactivity: 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
Incompatible materials: Avoid strong oxidizing agents, acids, bases, reducing agents, chlorates, chlorine, organic amines, aluminum, zinc, tin, copper and their alloys.
Hazardous combustion products: Carbon monoxide and carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity:

Oral (LD50 Rat): >5000mg/kg
Dermal (LD50 Rabbit): >2000mg/kg
Inhalation (LC50 Rat): Not determined

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.
Carcinocenicity: NTP/IARC/OSHA Carcinogen: No
Reproductive toxicity: No data available.
STOT-single exposure: May cause respiratory irritation. May cause dizziness or drowsiness. Symptoms may include headache, dizziness, nausea, euphoria, drowsiness and fatigue.
STOT-repeated exposure: Not classified
Aspiration hazard: May be fatal if swallowed and enters airways.
Ingestion: May irritate the mouth, throat and gastrointestinal tract. Swallowing large amounts may cause central nervous system depression: headache, dizziness and gastrointestinal distress. 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): Not determined
96h EC-50 (invertebrates): Not determined
48h LC-50 (algae): Not determined

Persistence and degradability: Expected to be readily biodegradable.
Bioaccumulative potential: Dibasic Ester does not bioaccumulate in the environment.
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:

Not regulated
Drum label : Combustible liquid
Bulk shipment: (contains UN3092, 1-methoxy-2-propanol, Class 3, packing group III)

IATA and IMDG:

Marine Pollutant (IMDG Code): Not regulated.
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): Ethylene Glycol Monobutyl Ether CAS# 111-76-2, percent by wt. = 10%.
CERCLA: This product does not have a reportable quantity.

United States Right-To-Know: Ethylene Glycol Monobutyl Ether CAS# 111-76-2 - California, Massachusetts, Minnesota, New Jersey & Pennsylvania. 1-Methoxy-2-propanol CAS# 107-98-2 – Massachusetts, 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: February 1, 2018, vs. #5 – SDS updated for flash point.
Hazard Ratings (HMIS): Health 2, Flammability 1, Reactivity 0. 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.