

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Nikken Printing Supply U.S.A., Inc.

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Revision Date: 2/07/2007

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PRODUCT TRADE NAME:

AS ALCOHOL SUBSTITUTE

2. COMPOSITION / INFORMATION ON INGREDIENTS:

Chemical Name	% by Wt Range	CAS Number	EXPOSURE LIMITS 8 hr. TWA (PPM)	
			OSHA PEL	ACGIH TLV
Propylene glycol	20.00-40.00	57-55-6	None	None
2-Butoxyethanol	40.00-60.00	111-76-2	50 ppm (skin)	25 ppm (skin)

3. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

2-Butoxyethanol can affect you when breathed in and by passing through your skin. Exposure may cause reproductive damage. Handle with extreme caution. Exposure may cause nose, throat, and respiratory tract irritation. Inhalation and ingestion may cause blood in the urine, blood abnormalities, kidney damage, liver damage, and central nervous system depression characterized by headache, dizziness, nausea, weakness, drowsiness, fatigue, and unconsciousness. Target Organs: Liver, kidney, spleen, and lung.

HMIS HAZARD CLASS

HEALTH	(Blue)	2
FLAMMABILITY	(Red)	2
REACTIVITY	(Yellow)	0
PROTECTIVE EQUIPMENT		B

HAZARD INDEX:

0=Minimal Hazard 1=Slight Hazard 2=Moderate Hazard 3=Serious Hazard 4=Severe Hazard

POTENTIAL HEALTH EFFECTS

EYES: Exposure may cause eye irritation, stinging, tearing, redness, and swelling.

SKIN CONTACT: Exposure may cause skin irritation.

SKIN ABSORPTION: Prolonged or repeated liquid contact can result in defatting, cracking, burning, and drying of the skin which may result in skin irritation and dermatitis. Skin absorption is possible, and skin contact may be harmful.

INGESTION: Single dose oral toxicity is moderate. Swallowing large amounts may cause gastric irritation and abdominal spasms, and acidosis.

INHALATION: Short-term inhalation toxicity is moderate. Exposure may be harmful. Symptoms are more typically seen at air concentrations exceeding the recommended exposure limits.

CHRONIC (CANCER) INFORMATION: This product has not been identified as possible cancer hazard by NTP, IARC, or OSHA.

ACUTE EFFECTS: May cause skin, eye and digestive tract irritation.

OTHER HEALTH HAZARDS: 2-Butoxyethanol in this product has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

4. FIRST AID MEASURES:

EYES: Immediately flush eyes with water. After initial flushing, remove any contact lenses and continue flushing for at least 5 minutes. Get medical attention if irritation persists.

SKIN: Wash off in flowing water or shower. Get medical attention if irritation develops and persists. Remove contaminated clothing.

INGESTION: Give two glasses of water and induce vomiting. Get medical attention.

INHALATION: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Get medical attention.

NOTE TO PHYSICIAN: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 61°C

FLAMMABLE LIMITS in air, Volume: LFL: 1.00 ; UFL: 10.00

EXTINGUISHING MEDIA: Use water, carbon dioxide, and dry chemical.

FIRE FIGHTING INSTRUCTIONS: Firemen should wear a self-contained breathing apparatus and full protective clothing.

FIRE & EXPLOSION HAZARDS: Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES:

Wear appropriate respirator and other protective clothing. Shut off source of leak only if it is safe to do so. Dike and contain. Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking containers and seal tightly for proper disposal. Flush area with water to remove trace residue. Dispose of flush solution as above.

7. HANDLING AND STORAGE:

Cause eye and skin irritation. Do not get in eyes, on skin, on clothing. Avoid ingestion and skin contact. Wash thoroughly after handling. Empty containers retain product residue, (liquid and/vapor), and can be dangerous. Do not cut, weld, pressurize, and braze, solder, grind, drill, or expose such containers to heat, sparks or open flames. Empty drums should be completely drained, properly bunged, and promptly returned and disposed of. Prevent build up of vapors to explosive concentration. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Use with adequate ventilation. Maintain good housekeeping. **FOR INDUSTRIAL USE ONLY.**

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

Engineering controls: Local exhaust ventilation may be necessary to keep airborne concentrations below the permissible exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE): RESPIRATORY PROTECTION: Avoid prolonged or repeated breathing of vapors. If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH-Approved respirator to prevent overexposure. In accord with 29 CFR 1910.134. Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

EYE PROTECTION: Use safety glasses or goggles as appropriate (29 CFR 1910.133).

SKIN: Wear rubber gloves.

OTHER CLOTHING AND EQUIPMENT: It is suggested that a source of clean water be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES:

<u>Appearance:</u> Clear liquid.	<u>Odor:</u> Glycol ether mixture odor.	<u>Boiling Point:</u> 171°C	<u>Density:</u> 0.903
<u>Water Solubility:</u> Miscible.	<u>Vapor Pressure:</u> 0.60 mm Hg (20°C)	<u>Vapor Density:</u> 4.1	<u>pH:</u> Not applicable.

10. STABILITY AND REACTIVITY:

STABILITY: Stable under normal ambient temperature and pressure.

CONDITIONS TO AVOID: Open flame and excessive heat.

HAZARDOUS POLYMERIZATION: Has not been reported.

INCOMPATIBILITY WITH OTHER MATERIALS: Incompatible materials, organic materials or explosives.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, ammonia, nitrogen oxide, nitrous oxide, nitrogen and other materials.

11. TOXICOLOGICAL INFORMATION:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>LC50 PPM (Inhalation rat)</u>	<u>LD 50 mg/kg (Oral-rat)</u>
2-Butoxyethanol	111-76-2	450/4 hr (rat)	1480 mg/kg (oral-rat)

12. ECOLOGICAL INFORMATION: No aquatic toxicity data available for the mixture.

13. DISPOSAL CONSIDERATIONS: Dispose in a manner consistent with federal, state, and local regulations. Refer to latest EPA or State Regulations regarding proper disposal.

14. TRANSPORT INFORMATION: This product is not hazardous material for (DOT) shipping.

D.O.T. SHIPPING description: Not Regulated.

IMO: SHIPPING NAME: Not Regulated.

IATA: SHIPPING NAME: Not Regulated.

15. REGULATORY INFORMATION:

SARA Section 313: The following ingredients subject to reporting requirements of Section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.65:

<u>Chemical Name</u>	<u>% by Wt Range</u>	<u>CAS Number</u>	<u>EXPOSURE LIMITS 8 hr. TWA (PPM)</u>	
			<u>OSHA PEL</u>	<u>ACGIH TLV</u>
2-Butoxyethanol	5.00-30.00	111-76-2	25 ppm (skin)	25 ppm (skin)

16. OTHER INFORMATION: All information appearing herein is based upon Data obtained from Manufacturer and/or recognized technical sources. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the material are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, disposal of the material. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use. To the best of our knowledge, the information contained herein is accurate. However, neither Nikken Printing Supply U.S.A., Inc., nor any of its distributors assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.