MATERIAL SAFETY DATA SHEET

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SECTION I - PRODUCT IDENTIFICATION

MSDS FORM #32 HMIS CODES: H F R PP PRODUCT CODE: SS 1 1* 3 0 H

PRODUCT NAME: DENATURED ALCOHOL (BORTZ)

U.S. DOT SHIPPING DESCRIPTION: DENATURED ALCOHOL, 3, NA1986, PG-I, FLAMMABLE LIQUID, POISON

SECTION II - HAZARDOUS INGREDIENTS

			ACGIH	OSHA EXPOSURE LIMITS				
INGREDIENT	CAS NUMBER	%WT	TLV/TWA PPM		TWA PPM MG/M ³		TEL MG/M ³	VAPOR PRESS mmHq @ TEMP
INGKEDIENI	CAS NONDER	-01/1	FFM	FFM	MG/M	PPM	MG/M	
Ethyl Alcohol	00064-17-5	80%	1000	1000	1900	_	-	42.0 @ 68°F
Isopropyl Alcohol	00067-63-0	10%	400	400	980	500	1225	33.0 @ 68°F
Methanol	00067-56-1	5%	200	200	260	250	310	98.0 @ 68°F
Methyl Isobutyl Ketone	00108-10-1	<5%	50	50	205	75	300	15.0 @ 68°F

SECTION III - PHYSICAL AND CHEMICAL DATA

BOILING RANGE: $147-177^{\circ}F$ EVAPORATION RATE: Slower Than Ether. SPECIFIC GRAVITY ($H_20=1$): 0.8 VAPOR DENSITY: Heavier Than Air. SOLUBILITY IN WATER: Soluble. VOLATILE VOLUME: 100%

APPEARANCE AND ODOR: Clear liquid with alcohol odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: Flammable Liquid - Class IB

FLASH POINT: $60^{\circ}F$ (TCC) LEL: 2.2% UEL: 36.5% EXTINGUISHING MEDIA: Foam, Alcohol Foam, CO₂, Dry Chemical, Water Fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Handle as extremely flammable liquid. Vapor combines with air to form an explosive mixture that can be ignited easily by remote sources or static spark. Closed containers can develop internal pressure and may rupture when subjected to extreme heat. SPECIAL FIREFIGHTING PROCEDURES: Use self-contained breathing apparatus to avoid inhalation of

SPECIAL FIREFIGHTING PROCEDURES: Use self-contained breathing apparatus to avoid inhalation of concentrated vapor. Avoid spreading burning liquid with water fog used for cooling purposes.

SECTION V - HEALTH HAZARD DATA

POTENTIAL ROUTES OF ENTRY / SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: Exposure to high vapor concentration may irritate mucous membranes and respiratory tract. Overexposure can cause central nervous system depression, loss of coordination, dizziness, headache, and nausea; unconsciousness and asphyxiation possible.

EYE CONTACT: Short term liquid or vapor contact may result in irritation, redness, and tearing. SKIN CONTACT: Prolonged or repeated contact may cause drying of the skin, irritation, and dermatitis

SKIN ABSORPTION: Prolonged or repeated widespread contact may result in absorption of solvents, causing dizziness, headache, and nausea.

INGESTION: May cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Ingestion of excessive amounts may result in liver and eye damage.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Pre-existing eye, skin, respiratory, and central nervous system disorders, and unusual allergic sensitivity.

CHRONIC OR DELAYED HEALTH HAZARDS: Long term overexposure may cause damage to central nervous system, respiratory system, eyes, skin, gastrointestinal tract, liver, spleen, and kidneys.

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CARCINOGENICITY: NTP? NO. IARC MONOGRAPHS? NO. OSHA REGULATED? NO.

EMERGENCY AND FIRST AID PROCEDURES: If affected by inhalation of vapor, move victim to fresh air. If not breathing, apply artificial respiration and call emergency medical care. For eye contact, flush eyes with fresh water for at least 15 minutes. If irritation persists, seek medical attention. For skin contact, wash thoroughly with soap and water. Remove any contaminated clothing. If swallowed, have victim drink enough fresh water to ensure dilution, then induce vomiting by touching back of throat with finger or giving Ipecac syrup. Call emergency medical care.

SECTION VI - REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion can produce carbon monoxide and/or carbon dioxide. CONDITIONS TO AVOID: Open flame, sparks, direct heat, high temperature, and poor ventilation. INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, acids and alkalis. May soften or dissolve some rubber and plastics.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING, STORAGE, AND DISPOSAL

PRECAUTIONS FOR HANDLING AND STORAGE: No smoking! Keep containers closed when not in use. Do not handle or store near heat, flame, or strong oxidizers, acids and alkalis. Store in cool, well-ventilated area. Rotate stock, use older material first. Inspect all containers for leaks. STEPS TO TAKE IF MATERIAL IS RELEASED OR SPILLED: Extinguish all sources of ignition, ventilate enclosed areas, keep people away. Dike and absorb spilled liquid with inert material such as clay granules, sand, earth, or sawdust. Add water to saturate absorbent and mix thoroughly. Use rags to clean up small amounts of spilled material.

WASTE DISPOSAL METHOD: Collect contaminated absorbent material and rags into a suitable container, add water to cover waste. Dispose in accordance with all applicable local, state, and federal regulations.

SECTION VIII - CONTROL MEASURES FOR SAFE USE

RESPIRATORY PROTECTION: Wear organic vapor respirator (NIOSH/MSHA TC 23C or equivalent). If vapor concentration exceeds exposure limits, use air-supplied respirator (NIOSH/MSHA TC 19C or equivalent).

VENTILATION: For interior use, general mechanical ventilation may be sufficient to disperse vapor. Otherwise, open doors and windows or use portable fans to provide local exhaust. Ventilation equipment must be explosion-proof.

EYE PROTECTION: Use safety glasses, goggles, or face shield to protect eyes.

PROTECTIVE GLOVES: Use impermeable solvent-resistant gloves (e.g., neoprene) to avoid skin contact. OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Impermeable headcovering and general protective clothing are recommended for protection as necessary.

WORK/HYGIENIC PRACTICES: Wash hands and face before eating. No smoking in or near area of use!

SECTION IX - SPECIAL CAUTIONS

Keep away from heat, flame, and sparks. Use non-sparking tools made of aluminum, brass, or copper. All electrical equipment must be explosion-proof. Ground and bond all metal containers and equipment. Use only with adequate ventilation or protection. Avoid breathing spray mist or vapor. Do not ingest. Avoid contact with skin. Close container after each use. Keep out of reach of children. Do not crush, puncture, cut, grind, or weld empty containers, which may retain product residues and ignitable vapor.

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