Nasco
901 Janesville Ave.
P.O. Box 901
Fort Atkinson, WI 53538-0901

MATERIAL SAFETY DATA SHEET

MSDS No.: EE0080
Revision Date: September 3, 2013
Approved by: James A. Bertsch

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Section 1 Chemical Product and Company Information

Product	ETHYL ALCOHOL, DENATURED, (190 PROOF)
Synonyms	Ethanol

CHEMTREC 24 Hour Emergency Phone Number (800) 424-9300

Section 2 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units (ACGIH 2001)
Ethyl alcohol	64-17-5	95%	TWA: 1000 ppm
Water	7732-18-5	5%	None established.
Denaturants:			
Methyl alcohol	67-56-1		TWA: 200 ppm; STEL: 250 ppm
Methyl isobutyl ketone	108-10-1		TWA: 50 ppm; STEL: 75 pm
Isopropyl alcohol	67-63-0		TWA: (400) ppm; STEL: (500) ppm

Section 3 Hazards Identification

Emergency Overview

DANGER! FLAMMABLE!
HARMFUL IF SWALLOWED.
Avoid prolonged or repeated inhalation of vapor. Overexposure may be harmful.
Keep away from heat, sparks and open flame.
Target organs: Eyes, central nervous system, liver, kidneys.

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

Health	1
Fire	3
Reactivity	0
Contact	2

HMIS *

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General Information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Fires involving a small amount of combustibles may be smothered by dry chemical. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

Extinguishing Media: Carbon dioxide, dry chemical, water spray, alcohol foam.
Flash Point: 5°C (41°F)* *(For Ethanol, 200 proof)
Autoignition temperature: 400°C (752°F)*
Explosion Limits: Lower: 4.0% (V) **Upper:** 20.0% (V)*

NFPA

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Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Remove all sources of ignition. Provide adequate ventilation. Recover for use if not contaminated. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

(2004 EMERGENCY RESPONSE GUIDEBOOK, RSPA P 5800.9, GUIDE PAGE NO. 127)

Section 7 Handling & Storage — FLAMMABLE STORAGE CODE RED

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Liquid. *(For Ethanol, 200 proof)
Appearance: Clear, colorless.
Odor: Mild characteristic odor.
pH: N/A
Vapor pressure (mm Hg): Ca 50 @ 20°C *
Vapor Density (Air = 1): Ca 1.5 *
Evaporation rate (Butyl acetate = 1): Ca 2 *
Viscosity: N/A
Boiling point: 74-80°C (165.2-176°F) *
Freezing / Melting point: -114°C (-173°F) *
Decomposition temperature: N/A
Solubility: Complete.
Specific gravity (H_2O = 1): 0.7919-0.7955 @ 60/60°F *
Percent volatile (%): 100%
Molecular formula: Mixture.
Molecular weight: Mixture.

Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.
Incompatibilities with other materials: Strong oxidizers, inorganic acids and halogens.
Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Effects of overexposure: Ingestion causes dizziness, drowsiness, decreased reaction, euphoria, nausea, vomiting, staggering gait and coma. Inhalation may cause dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat. Contact with skin causes irritation defatting on prolonged contact. Contact with eyes may cause blindness.

ORL-RAT LD50: 7060 mg/Kg
IHL-RAT LC50: 20000 ppm/10H
SKN-RBT LD50: N.A.

Section 12 Ecological Information

Data not yet available.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1170
Shipping name: Ethanol
Hazard class: 3
Packing group: II
Exceptions: Limited quantity equal to or less than 1 Lt.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (200-578-6), RCRA code D001.

Section 16 Additional Information