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THE POWER OF THREE³

PHARMCO-AAPER

AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

SECTION I

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: REAGENT ALCOHOL, 200 PROOF

This MSDS is valid for all grades and catalog #'s

Synonyms: Denatured Alcohol; Denatured Ethanol

Formula: Mixture

Manufacturer: Pharmco Products Inc.
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II

COMPOSITION / INFORMATION ON INGREDIENTS

% wt.	Material	CAS	Exposure Limits
90.5%	Ethanol	64-17-5	1000ppm TWA
4.98%	Isopropanol	67-63-0	400 ppm TWA; 500 STEL
4.52%	Methanol	67-56-1	200ppm TWA, OSHA/ACG IH; 250ppm STEL OSHA/ACG IH

SECTION III

HAZARDS IDENTIFICATION

Carcinogen Status: Established uses of denatured ethanol are not considered to pose a significant cancer hazard.

Poisonous: This product contains methanol. It can not be made non-poisonous. Ingestion of 60-200ml of methanol is a fatal dose for most adults. Ingestion of 10ml may cause blindness.

Routes of Exposure:

Swallowing: May cause dizziness, faintness, drowsiness decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, blindness, coma and death.

Skin Absorption: Prolonged or widespread contact may result in the absorption of potentially harmful amounts.

Inhalation: High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the

eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.

Skin Contact: Prolonged or repeated contact may cause defatting and drying of the skin.

Eye Contact: May cause irritation including stinging, tearing, and redness

Effects of Repeated Overexposure: Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis. Overexposure to methanol may cause eye damage and liver or kidney injury.

Other Health Hazards: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome.

Medical Conditions Aggravated by Overexposure:

Repeated exposure to ethanol may aggravate liver injury produced from other causes. Skin contact may aggravate dermatitis.

SECTION IV FIRST AID

Obtain medical attention for all cases of over-exposure.

Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention. If medical advice is delayed and the person has swallowed a few ounces, give 3-4 ounces of hard liquor such as whiskey.

Skin: Wash skin with soap and water for at least 15 minutes
Inhalation: Remove to fresh air; Give artificial respiration if not breathing; If breathing is difficult oxygen may be given by qualified personnel; Obtain medical assistance is discomfort persists.

Eye Contact: Flush eyes with water for at least 15 minutes. Obtain medical assistance.

Note to Physician: Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.5-.15%. Approximately 25% of individuals show signs of intoxication at these levels. Above .15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood is ethanol level is 0.3-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

SECTION V FIRE FIGHTING MEASURES

Fire/Explosive Properties

Flash Point: *for pure ethanol* 58F (14C) Tag Closed Cup

70F (21C) Tag Open Cup

Flammable Limits in Air (% by volume):

3.3%(ethanol) - 36.0%(methanol)

Flammability Classification: 3 (NFPA)

1993 Emergency Response Guidebook: Guide 26

1996 North American Emergency Response Guidebook:

Guide 127

Extinguishing Media: Apply alcohol-type or all-purpose foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

Special Fire Fighting Procedures: Use water spray to cool fire-exposed containers and structures; Use water spray to disperse vapors - re-ignition is possible; Use self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards:

- Vapors may travel to source of ignition and flash back.
- Vapors may settle in low or confined spaces.
- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.

SECTION VI

SPILL/ACCIDENTAL RELEASE MEASURES

Small spills can be flushed with large amounts of water.

Large spills: Eliminate all ignition sources; ground all equipment; do not walk through spill; stop spill if possible; prevent entry into sewers, confined spaces, etc.; use a vapor suppressing foam to reduce vapors; absorb spill with non-combustible matter and transfer to containers; use non-sparking tools to collect absorbed material.

Refer to section 11 for disposal information.

SECTION VII HANDLING AND STORAGE

- Flammable material - keep away from heat, sparks, and flame; sudden releases of hot organic vapors or mists from process equipment operating at elevated temperature may result in ignitions without the presence of obvious ignition sources.
- Avoid contact with eyes.
- Keep container closed.
- Use with adequate ventilation.
- Ground container when transferring product.
- Vapors may collect in containers; treat empty containers as hazardous.
- Wash thoroughly after handling
- Vapors may settle in low or confined areas
- Danger - may cause blindness or death if swallowed

SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Special, local ventilation is needed where vapors escape to the workplace air

Respiratory Protection: Use self-contained breathing apparatus in high vapor concentration

Personal Protective Equipment: gloves, lab coat or uniform, safety glasses, eye wash, safety shower

SECTION IX

PHYSICAL AND CHEMICAL PROPERTIES

Appearance: clear, colorless liquid

Odor: characteristic

Vapor pressure @ 20C: 44.6mmHg for pure ethanol

Vapor density: 1.6 (air =1) for pure ethanol

Boiling point @ 760mm Hg: 78.3C (172.9F) for pure ethanol

Freezing Point: -114C (-173.4F) for pure ethanol

Solubility in Water: 100% @ 20C

MSDS 047, Revision 2.3 / Revision Date 08/08, MSZ

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Specific Gravity : . @ 15.56C .7945

Density @ (60F) 6.62 lbs/gal

Evaporation Rate: (butyl acetate = 1) 3.3 for pure ethanol

Percent Volatiles: 100%

SECTION X

STABILITY/REACTIVITY INFORMATION

Stability: Stable

Conditions to avoid: None known

Incompatibility/Materials to avoid: strong oxidizing agents; strong inorganic acids

Hazardous Combustion/Decomposition Products:

Carbon monoxide and/or carbon dioxide

Hazardous Polymerization: Will not occur

SECTION XI

DISPOSAL CONSIDERATIONS

Vapors may collect in empty containers. Treat empty containers as hazardous.

Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.

SECTION XII TRANSPORTATION INFORMATION

Proper Shipping Name: Alcohol, nos

Hazard Class: 3

UN Number: 1987

IMO Information: Alcohols, NOS

Label of Class: 3

Packing Group II

Intermediate flashpoint group

SECTION XIII REGULATORY INFORMATION

Federal EPA

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

Chemical Name	CAS Number	RQ
Methanol	67-56-1	5,000lb

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, and 312). Components present in this product at a level which could require reporting under this statute are: none.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

Methanol (67-56-1) upper bound concentration 4.52%

Isopropanol (67-63-0) upper bound concentration 4.98%

Toxic Substances Control Act (TSCA) Status:

The ingredients of this product are on the TSCA inventory.

State Right to Know

Massachusetts: Hazardous substances and extraordinarily hazardous substances must be identified. Components present which could require reporting:

Hazardous ($\geq 1\%$):

Ethanol (CAS 64-17-5) upper bound conc. 90.5%

Methanol (CAS 67-56-1) upper bound conc. 4.52%

Isopropanol (CAS 67-63-0) upper bound conc. 4.98%

Pennsylvania: Hazardous substances must be identified.

Hazardous ($\geq 1\%$):

Ethanol (CAS 64-17-5) upper bound conc. 90.5%

Methanol (CAS 67-56-1) upper bound conc 4.52%

Isopropanol (CAS 67-63-0) upper bound conc. 4.98%

California SCAQMD Rule 443.1 (VOC's)

A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides, or carbonates, ammonium carbonate, 1,1,1 tri-chloroethane, methylene chloride, (FC-23), (CFC-113), (CFC-12), (CFC-11), (CFC-22), (CFC-114) and (CFC-115).

VOC 790g/l; vapor pressure 41.4 mm Hg @20C for pure Ethanol, 200

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.