

An ISO 9001:2000
Certified Company



THE POWER OF THREE³

PHARMCO-AAPER

AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300 or 202-483-7616

MATERIAL SAFETY DATA SHEETS

Part Number/Trade Name: D-LIMONENE
This MSDS is valid for all grades and catalog numbers

General Information

PHARMCO-AAPER

58 Vale Road
Brookfield, CT 06804
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 040065
Phone (502) 633-0650
Fax (502) 6330685

Ingredients/Identity Information

Ingredient: CYCLOHEXENE, 1-METHYL-4-(1-METHYLETHENYL)-, (R)-; (D-LIMONENE)
Ingredient Sequence Number: 01
Percent: 99.5

NIOSH (RTECS) Number: GW6360000
CAS Number: 5989-27-5
OSHA PEL: NOT APPLICABLE
ACGIH TLV: NOT APPLICABLE

Physical/Chemical Characteristics

Appearance And Odor: COLORLESS MOBILE LIQUID WITH CITRUSY ODOR.
Boiling Point: 352F, 178C
Vapor Pressure (MM Hg/70 F): 1@20C

Vapor Density (Air=1): 4.69
Specific Gravity: SUPP DATA
Solubility In Water: INSOLUBLE
Percent Volatiles By Volume: 100

Fire and Explosion Hazard Data

Flash Point: 122F, 50C
Flash Point Method: TCC
Lower Explosive Limit: 0.7%
Upper Explosive Limit: 6.1%
Extinguishing Media: DRY POWDER, FOAM, CO2, IF WATER MUST BE USED, IT SHOULD BE USED AS A SPRAY ONLY.
Special Fire Fighting Proc: WEAR NIOSH/MSHA APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT (FP N). CLASS B FIRE PROCEDURES.
Unusual Fire And Expl Hazrds: COMBUSTIBLE LIQUID; AVOID HEAT, SPARKS & OPEN FLAME.

Reactivity Data

Stability: YES

Cond To Avoid (Stability): STRONG OXIDIZING AGENTS.

Materials To Avoid: STRONG OXIDIZING AGENTS.
Hazardous Decomp Products: CO2 OR CO ON COMBUSTION.

Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT

Health Hazard Data

LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: CAN CAUSE EYE DAMAGE AND SKIN IRRITATION.
HARMFUL IF SWALLOWED. HOWEVER, THE PRODUCT IS DESIGNATED GRAS BY FEMA AND APPROVED BY THE FDA FOR FLAVOR USE IN FOODS. INHALATION MAY CAUSE NAUSEA.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT
Signs/Symptoms Of Overexp: SEE HEALTH HAZARDS.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: SKIN: REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREAS WITH COPIOUS AMOUNTS OF SOAP AND WATER. EYES: REMOVE CONTACT
DRINK MILK OR WATER TO DILUTE SUBSTANCE. SEE PHYS IMMED. INHAL: SEEK FRESH AIR IMMED. IF BREATHING IS DIFFICULT, SEE PHYS.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: SMALL SPILLS SHOULD BE ABSORBED BY DIRT, SAND OR OTHER SUITABLE ABSORBENTS FOR DISPOSAL. LARGE SPILLS CAN BE DIKED W/EARTH, THEN PUMPED TO TANK TRUCK FOR DISPOSAL. CLEAN AREA WITH SOAPY WATER.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: DISPOSE IN LANDFILL APPROVED FOR SAME, AWAY FROM WATER SUPPLIES. BURNING IS AN ALTERNATE METHOD. OBSERVE LOCAL, STATE AND FEDERAL REGULATIONS.
Precautions-Handling/Storing: USUAL PRECAUTIONS FOR COMBUSTIBLE LIQUIDS.
Other Precautions: NONE NEEDED.

Control Measures

Respiratory Protection: NOT NORMALLY REQUIRED, BUT IF VAPOR CONCENTRATION IS HIGHER DUE TO HEAT, USE NIOSH/MSHA APPROVED ORGANIC VAPOR RESPIRATOR.
Ventilation: NOT NORMALLY REQD. BUT IF NEEDED, MECHANICAL EXHAUST MAY BE NECESSARY IN A CONFINED SPACE.
Protective Gloves: STANDARD INDUSTRIAL TYPE RUBBER GLOVES.
Eye Protection: CHEM WORK GOG OR FULL LNGTH FSHLD(FP N).
Other Protective Equipment: NOT NORMALLY REQUIRED.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: SPEC GRAV: 0.838-0.843@25C(H2O=1).

Transportation Data

DOT PSN Code: GJL
DOT Proper Shipping Name: FLAMMABLE LIQUIDS, N.O.S.
DOT Class: 3
DOT ID Number: UN1993
DOT Pack Group: III
DOT Label: FLAMMABLE LIQUID
IMO PSN Code: HIA
IMO Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. *
IMO Regulations Page Number: 3345
IMO UN Number: 1993
IMO UN Class: 3.3
IATA PSN Code: MCA

IATA UN ID Number: 1993
IATA Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. * *
IATA UN Class: 3
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: MCA
AFI Prop. Shipping Name: FLAMMABLE LIQUIDS, N.O.S. *
AFI Class: 3
AFI ID Number: UN1993
AFI Pack Group: III
AFI Label: FLAMMABLE LIQUID
AFI Basic Pac Ref: 7-7

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Disposal Data
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Refer to applicable regional, state and federal codes.
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Label Data
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Common Name: D-LIMONENE, P&F FCC
Chronic Hazard: NO
Signal Word: WARNING!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-Moderate: X
Reactivity Hazard-None: X
Special Hazard Precautions: COMBUSTIBLE LIQUID. AVOID HEAT, SPARKS & OPEN

FLAME. ACUTE: EYE CONTACT MAY CAUSE DAMAGE. SKIN CONTACT MAY CAUSE
NONE LISTED BY MANUFACTURER.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y

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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.