HERCULES

MATERIAL SAFETY DATA SHEET
Hercules Canada Inc.
Pinova Division
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(905) 632-7861  (BUSINESS)
(905) 848-8888  (24 HRS)

1 PRODUCT IDENTIFICATION
PRODUCT NAME HERCULES® ALPHA-PINENE ALL GRADES
CHEMICAL/COMMON NAME terpene hydrocarbon
CAS NUMBER 80-56-8

2 COMPOSITION / INFORMATION ON INGREDIENTS
Hazardous Ingredient CASRN Amount
alpha-pinene 80-56-8 88 - 99 %
camphene 79-92-5 0.5 - 7 %

3 HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW
WARNING!
Flammable liquid
May cause eye irritation.
May cause skin irritation.
May be absorbed through the skin.
Inhalation of vapour or mist may cause respiratory tract irritation.
May cause central nervous system depression (dizziness, drowsiness, incoordination).
POTENTIAL HEALTH EFFECTS
Ingestion may cause nausea, vomiting, and gastrointestinal irritation.
Aspiration may cause lung damage.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4 FIRST AID MEASURES
SKIN
Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION
Remove to fresh air. Get medical attention if nasal, throat or lung irritation develops.

INGESTION
Do NOT induce vomiting. Get immediate medical attention. See Note to Physician.

NOTES TO PHYSICIAN
Aspiration into the lungs will result in chemical pneumonitis and may be fatal. Ingestion may cause damage to the esophageal mucosa which would contraindicate insertion of a nasogastric tube. Measures against circulatory shock and respiratory depression may be necessary.

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MSDS NUMBER 857 2112 0100 VERSION 11
5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES
Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product. Cool containers with water to prevent rupture.

CONDITIONS TO AVOID
None known.

HAZARDOUS COMBUSTION PRODUCTS
During combustion, the following substances may be formed: carbon monoxide, carbon dioxide, irritating gases, aldehydes and carboxylic acids

FLASH POINT 33 °C Tagliabue

6 ACCIDENTAL RELEASE MEASURES

Extinguish all sources of ignition. Ventilate area. Wear protective equipment as required (see MSDS Section 8). Evacuate area of all personnel. For small spills: Add absorbent, sweep up, and dispose appropriately. For large spills: Dike to contain and pump into drums for use or disposal. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7 HANDLING & STORAGE

GENERAL MEASURES
Flammable. Bond containers during filling or discharge when performed at temperatures at or above the product flash point. Store in a cool, dry area. Store in areas designed for flammable liquid storage (see NFPA 30). Keep container closed when not in use.

MATERIALS OR CONDITIONS TO AVOID
Keep away from heat, flame, sparks and other ignition sources. Spontaneous combustion may occur in materials soaked with this product and exposed to air, as well as soaked vessel and piping insulation. Avoid storing product near incompatible materials. See MSDS Section 10.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS
Keep away from ignition sources. Property discard any item soaked with material, as spontaneous heating may occur. Eyewash fountains and safety showers should be easily accessible. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

GENERAL HYGIENIC PRACTICES
Avoid contact with eyes, skin, and clothing. Avoid breathing vapour, fumes or mist. Handle in areas with adequate ventilation. Do not swallow. Avoid contamination of food, beverages, or smoking materials. Wash thoroughly after handling, and before eating, drinking or smoking. Remove contaminated clothing and shoes promptly and clean thoroughly before reuse.
RECOMMENDED EXPOSURE LIMITS
ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)
- alpha-pinene 20 ppm TWA (listed under ‘Turpentine and selected monoterpenes’)
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PERSONAL PROTECTIVE EQUIPMENT
Chemical goggles
Impervious gloves
Appropriate protective clothing
Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE
Eliminate ignition sources.
Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.
Keep area clean. Product will burn.

9 PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: colorless to slight yellow
ODOR: pine
Boiling Point 155 - 170 °C
Specific Gravity 0.86
Percent Volatile 100
Vapour Pressure 10 mmHg at 20 °C
Evaporation Rate slower than butyl acetate
Vapour Density heavier than air
Solubility In Water negligible at 20 °C
Freezing Point < -40 °C

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS
None known.

HAZARDOUS POLYMERIZATION
Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS
Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS
Incompatible with: oxidizing agents, acids and acid catalysts

11 TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION
Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.
REPORTED HUMAN EFFECTS
PRODUCT/SIMILAR PRODUCT - Irritating to the skin and mucous membranes. Ingestion causes gastric irritation, pain, nausea, vomiting. Inhalation may cause chest pain, bronchitis, dizziness, delirium, ataxia or coma. Aspiration into the lungs will cause chemical pneumonia. Inhalation may cause pulmonary edema or pneumonia. May be absorbed through the skin, lungs, and intestinal tract, resulting in kidney damage, painful urination, respiratory or central nervous system effects. Chronic contact may cause benign skin tumors. A maximization skin patch test with 10% in petrolatum resulted in three sensitization reactions from 25 subjects tested. Sensitization suspected to be caused by oxidation products of the test sample. Retesting under duplicate conditions with a sample protected from oxidation resulted in no sensitization changes.

REPORTED ANIMAL EFFECTS
PRODUCT/SIMILAR PRODUCT - Acute oral LD50 (rat): 2.3-5.1 g/kg; acute dermal LD50 (rabbit): > 5 g/kg. Acute effects included local irritation, central nervous system depression, and death from respiratory failure. Inhalation exposure of rats, mice, and guinea pigs to atmosphere containing saturated vapour (26.0 mg/L) resulted in death of all animals within 35 minutes. Moderate to severe irritant to rabbit skin; severe conjunctival irritant to rabbit eyes with superficial cornea and iriic effects. Not phototoxic when applied undiluted to hairless mice or swine.

MUTAGENICITY/GENOTOXICITY INFORMATION
PRODUCT/SIMILAR PRODUCT - Negative in Ames bacterial reverse mutation test with and without activation.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
No ecological studies have been carried out on this product.

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL
Incorporation in accordance with applicable regulations is the recommended disposal method. Disposal should be in accordance with applicable federal, provincial and local regulations.

14 TRANSPORT INFORMATION

TDG: Regulated

For information regarding transportation classification of this product, please contact Hercules Canada Inc. at (905) 279-3338.

15 REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

CEPA
All components of this product comply with substance notification requirements under CEPA

CHEMICAL INVENTORIES
U.S. TSCA: The components of this product are included on the TSCA Inventory.

WHMIS CLASSIFICATION
B2 - Flammable Liquid
D2B - Other Toxic Effects/Toxic

PREPARED BY: Hercules Canada Inc., Regulatory Affairs, (905) 279-3338

16 OTHER INFORMATION

HMIS RATINGS:
- Health 2 Moderate Hazard
- Flammability 3 Serious Hazard
- Reactivity 0 Minimal Hazard

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LIST OF ACRONYMS

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: OSHA Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
RQ: Reportable Quantity
SARA: Superfund Amendment Reauthorization Act
STE: Short-Term Exposure Limit
TLV: Threshold Limit Values (registered trademark of ACGIH)
TPQ: Threshold Planning Quantity
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average

DISCLAIMER

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or provincial laws.