



**MATERIAL SAFETY DATA SHEETS**

**SECTION I**

**PRODUCT AND COMPANY IDENTIFICATION**

**Product: Camphor (DL)**

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

Synonyms: Bicyclo(2.2.1) heptan-2-one, 1,7,7-trimethyl-, 1,7,7-Trimethylbicyclo[2,2,1]hepta-2-one; (+)-Camphor; Camphor, synthetic; 2-Bornanone; 2-Camphonone; Bicyclo(2,2,1)heptan-2-one, 1,7,7-trimethyl-; Gum Camphor,

Formula: C<sub>10</sub>H<sub>16</sub>O

Manufacturer: PHARMCO-AAPER  
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  
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Emergency Contact:  
CHEMTREC 1-800-424-9300

**SECTION II**

**COMPOSITION / INFORMATION ON INGREDIENTS**

% by weight	Material	CAS #	TLV/PEL	LC50/LD50
100	Camphor (DL)	76-22-2	TWA: 2 STEL: 3 (ppm) [Australia] TWA: 2 STEL: 3 (ppm) [Canada] TWA: 12 STEL: 19 (mg/m <sup>3</sup> ) [Canada] TWA: 2 (mg/m <sup>3</sup> ) from OSHA (PEL) [United States] TWA: 2 STEL: 4 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 2 STEL: 3 (ppm) [United Kingdom (UK)] TWA: 13 STEL: 19 (mg/m <sup>3</sup> ) [United Kingdom (UK)]	ORAL (LD50): Acute: 1310 mg/kg [Mouse].

**SECTION III**

**HAZARDS IDENTIFICATION**

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

**Potential Chronic Health Effects:**

**CARCINOGENIC EFFECTS:** A4 (Not classifiable for human or animal.) by ACGIH.

**MUTAGENIC EFFECTS:** Not available.

**TERATOGENIC EFFECTS:** Not available.

**DEVELOPMENTAL TOXICITY:** Not available.

The substance may be toxic to upper respiratory tract, skin, eyes, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

**SECTION IV**

**FIRST AID**

Obtain medical attention for all cases of over-exposure.

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Hazardous Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Hazardous Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Hazardous Ingestion:** Not available.

**SECTION V**

**FIRE FIGHTING MEASURES**

**Fire:**

Flammability of the Product: Flammable.

Auto-Ignition temperature: 467°C (872.6°F)

Flash point: CLOSED CUP: 65.6°C (150.1°F). OPEN CUP: 93°C (199.4°F).

Flammable limits: LOWER: 0.6% UPPER: 3.5%

Products of Combustion: These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards:** Flammable in presence of open flames and sparks, of heat.

**Explosion Hazards:** Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks, of heat.

**Fire Extinguishing Media:** Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Special Information:** Vapor is explosive when exposed to heat or flame

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#### SECTION VI

##### SPILL/ACCIDENTAL RELEASE MEASURES

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:** Flammable solid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

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#### SECTION VII

##### HANDLING AND STORAGE

**Precautions:** Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

**Storage:** Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 23°C (73.4°F).

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#### SECTION VIII

##### EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** TWA: 2 STEL: 3 (ppm) [Australia] TWA: 2 STEL: 3 (ppm) [Canada] TWA: 12 STEL: 19 (mg/m<sup>3</sup>) [Canada] TWA: 2 (mg/m<sup>3</sup>) from NIOSH TWA: 2 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] TWA: 2 STEL: 4 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 2 STEL: 3 (ppm) [United Kingdom (UK)] TWA: 13 STEL: 19 (mg/m<sup>3</sup>) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

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#### SECTION IX

##### PHYSICAL AND CHEMICAL PROPERTIES

**Physical State/Appearance:** Solid. (crystalline solid.)

**Molecular Weight:** 152.24 g/mole

**Odor:** Fragrant, Penetrating

**Taste:** Slightly bitter, cooling

**Color:** White

**pH (1% Solution in Water):** Not available.

**Boiling Point:** 205°C (401°F)

**Melting Point:** 180°C (356°F)

**Critical Temperature:** Not available.

**Specific Gravity:** 0.992 (Water = 1)

**Vapor Pressure (mm Hg):** Not applicable.

**Vapor Density (Air=1):** 5.24 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** 1.3 ppm

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Water/Oil Dist. Coefficient:** Not available.

**Ionicity (in water):** Not available.

**Dispersion Properties:** See solubility in water, acetone.

**Solubility:** Easily soluble in acetone. Very slightly soluble in cold water.

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#### SECTION X

##### STABILITY/REACTIVITY INFORMATION

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials, sources of ignition, excess heat.

**Incompatibilities:** Not available.

**Corrosivity:** Not available.

**Special Information:** Incompatible with heat, sunlight, potassium permanganate, metallic salts, chromic anhydride, oxidizing materials, combustible materials, organic materials

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#### SECTION XI

##### TOXICOLOGICAL INFORMATION

**Routes of Entry:** Absorbed through skin. Inhalation. Ingestion.

**Toxicity to Animals:** Acute oral toxicity (LD<sub>50</sub>): 1310 mg/kg [Mouse].

**Chronic Effects on Humans:** CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. May cause damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS).

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

**Special Information on Toxicity to Animals:** Not available.

**Special Information on Chronic Effects/Toxicity on Humans:** May affect genetic material based on animal data. Passes through the placental barrier in human. Acute Potential Health Effects: Skin: Causes skin irritation. May cause epileptic seizures. Eye: Causes eye irritation. May cause epileptic seizures. Inhalation: Causes irritation of the respiratory tract (mucous membranes) and may cause emphysema. May affect behavior - the brain and Central Nervous system (muscle contraction and spasticity). May affect the heart. Ingestion: Cause irritation of the gastrointestinal tract (nausea, vomiting). May affect behavior - the brain and Central

Nervous system (dizziness, convulsions, seizures, change of motor activity, rigidity). May be harmful if swallowed. Certain medical conditions may be aggravated by exposure: kidney disorders, liver disorders, heart disorders, epilepsy. Chronic Potential Health Effects: none identified.

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**SECTION XII  
ECOLOGICAL INFORMATION**

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Information on Products of Biodegradation:** Not available.

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**SECTION XIII  
DISPOSAL CONSIDERATIONS**

**Waste Disposal:** Recycle to process, if possible. Consult your local or regional authorities. Dispose of in accordance with Federal, State, and Local regulations.

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**SECTION XIV  
TRANSPORTATION INFORMATION**

**DOT Classification:** DOT CLASS 4.1: Flammable solid.

**UN:** Camphor, Synthetic UNNA: 2717 PG: III

**Special Provisions for Transport:** Not available.

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**SECTION XV  
REGULATORY INFORMATION**

**Federal and State Regulations:** Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) 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 the statute are: **NONE**

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: **NONE**

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: **NONE**

**Other Classifications:**

WHMIS (Canada): CLASS B-4: Flammable solid.

DSCL (EEC): R36/38- Irritating to eyes and skin.

**Protective Equipment:** Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**References:** Not available.

**Other Special Considerations:** Not available.

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The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.