

DL-CAMPHOR

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

CAMPHOR

OTHER NAMES

C10-H16-O, 2-bornanone, 2-bornanone, 2-camphanone, 2-camphanone, 2-oxobornane, 2-oxobornane, "gum camphor", "Japan camphor", "Formosa camphor", "laurel camphor", "matricaria camphor", "synthetic camphor", "norcamphor, 1, 7, 7-trimethyl-", "norcamphor, 1, 7, 7-trimethyl-", "1, 7, 7-trimethylnorcamphor", "1, 7, 7-trimethylnorcamphor", "1, 7, 7-trimethylbicyclo[2.2.1]-2-heptanone", "1, 7, 7-trimethylbicyclo[2.2.1]-2-heptanone", "1, 7, 7-trimethylbicyclo[2.2.1]heptan-2-one", "1, 7, 7-trimethylbicyclo[2.2.1]heptan-2-one", "2-keto-1, 7, 7-trimethylnorcamphane", "2-keto-1, 7, 7-trimethylnorcamphane", "bicyclo(2.2.1)heptan-2-one, 1, 7, 7-trimethyl-", "bicyclo(2.2.1)heptan-2-one, 1, 7, 7-trimethyl-"

PROPER SHIPPING NAME

CAMPHOR, synthetic

PRODUCT USE

SHALL not be supplied in block, ball disc or pellet form for domestic use unless enclosed in a device which prevents removal of contents. NHMRC.

Plasticiser for cellulose ester and ethers; used in manufacture of plastics, especially celluloid; in lacquers and varnishes; in explosives, pyrotechnics; as moth repellent; in embalming fluids; as preservative in pharmaceuticals and cosmetics.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS

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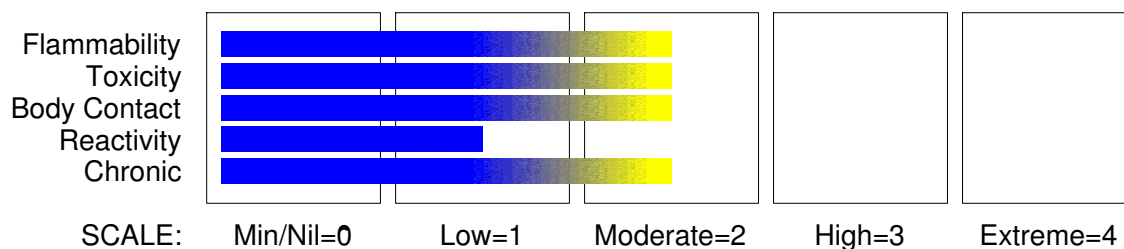
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4

Eye Irritation Category 2B

Flammable Solid Category 2



EMERGENCY OVERVIEW

HAZARD

WARNING

Determined by using GHS criteria:

H228 H302 H320

Flammable solid

Harmful if swallowed

Causes eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Do not eat, drink or smoke when using this product.

Ground/bond container and receiving equipment.

Wash hands thoroughly after handling.

Keep away from heat/sparks/open flame - No smoking.

Wear protective gloves and eye/face protection.

Use explosion-proof electrical/ventilating/lighting/equipment

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists, get medical advice/attention.

Specific treatment: refer to Label or MSDS.

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Section 2 - HAZARDS IDENTIFICATION

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
camphor	76-22-2	>97

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor at once.
Urgent hospital treatment is likely to be needed.
Avoid giving milk or oils.
Avoid giving alcohol.

EYE

If this product comes in contact with the eyes:
· Wash out immediately with fresh running water.
· Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
· If pain persists or recurs seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:
· Immediately remove all contaminated clothing, including footwear.
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

INHALED

· If fumes or combustion products are inhaled remove from contaminated area.
· Lay patient down. Keep warm and rested.
· Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
· Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
· Transport to hospital, or doctor.

NOTES TO PHYSICIAN

Treat symptomatically.

For camphor intoxications:

· Treatment is aimed at preventing convulsions. Intravenous sodium thiopental, pentobarbital or amobarbital (Amytal) is effective. The drug should be injected slowly until the desired condition is reached, namely a degree of depression sufficient to prevent or stop convulsions and to keep the patient asleep, but not deep enough to depress respirations or blood pressure. Intramuscular sodium phenobarbital may also be helpful. These drugs as well as diazepam, can be used to terminate camphor convulsions.

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Section 4 - FIRST AID MEASURES

- The patient should be kept under careful observation for many hours and protected from all possible stimuli. Wakefulness, muscular twitchings and increased reflex excitability are signs that warn for the need of additional barbiturate.
- Oxygen therapy, artificial respiration, as indicated.
- Gastric lavage (with warm water) may be performed when the patient is asleep or well pre-medicated. In the presymptomatic stage, lavage or induction of emesis should take precedence over all measures. Because of its low water solubility, pieces of camphor may remain in the stomach unless a large tube is used for lavage.
- After the stomach is emptied, a slurry of activated charcoal and/ or a saline cathartic may be administered by mouth.
- Avoid ingestion of oils or alcohol which may promote intestinal absorption of camphor.
- Extracorporeal haemodialysis with a lipid dialysate or resin haemoperfusion may be indicated.
- Laboratory data are not usually relevant, but liver and kidney tests are advisable. Camphor has been detected in sera of intoxicated patients at levels of 0.3 to 1.8 ug/ml. GOSSELIN, SMITH & HODGE: Clinical Toxicology of Commercial Products, 5th Ed.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

For SMALL FIRES:

Dry chemical, CO₂, water spray or foam.

For LARGE FIRES:

Water-spray, fog or foam.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

- Flammable solid which burns and propagates flame easily, even when partly wetted with water.
- Any source of ignition, i.e. friction, heat, sparks or flame, may cause fire or explosion.
- May burn fiercely
- May form explosive mixtures with air.
- May REIGNITE after fire is extinguished.
- Containers may explode on heating.
- Solids may melt and flow when heated or involved in a fire.
- Runoff may pollute waterways.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

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Section 5 - FIRE FIGHTING MEASURES

- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport, thereby providing a source of ignition.
 - Decomposition products may be irritating, poisonous or corrosive.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Personal Protective Equipment

Breathing apparatus.
Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- DO NOT touch or walk through spilled material.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Prevent dust cloud.
- With clean shovel (preferably non-sparking) place material into clean, dry container and cover loosely.
- Move containers from spill area.
- Control personal contact by using protective equipment.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- DO NOT touch or walk through spilled material.
- Control personal contact by using protective equipment.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain or cover with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area with water and dike for later disposal; prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

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Section 6 - ACCIDENTAL RELEASE MEASURES

camphor 200 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
camphor 25 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:
camphor 25 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:
camphor 2 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid smoking, naked lights or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Avoid contact with incompatible materials.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Working clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.

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Section 7 - HANDLING AND STORAGE

- Observe manufacturer's storing/handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

For low viscosity materials and solids:

Drums and jerricans must be of the non-removable head type.

Where a can is to be used as an inner package, the can must have a screwed enclosure.

For materials with a viscosity of at least 2680 cSt. (23 deg. C):

- Removable head packaging and
- cans with friction closures may be used.

Where combination packages are used, there must be sufficient inert absorbent material to absorb completely any leakage that may occur, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

All combination packages for Packing group I and II must contain cushioning material.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Segregate from chromic anhydride, potassium permanganate, chlorates, naphthalene, dichlorobenzene and organic solvents.

STORAGE REQUIREMENTS

FOR MINOR QUANTITIES:

- Store in an indoor fireproof cabinet or in a room of noncombustible construction.
- Provide adequate portable fire-extinguishers in or near the storage area.

FOR PACKAGE STORAGE:

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry, well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Protect containers from exposure to weather and from direct sunlight unless: (a) the packages are of metal or plastic construction; (b) the packages are securely closed are not opened for any purpose while in the area where they are stored and (c) adequate precautions are taken to ensure that rain water, which might become contaminated by the dangerous goods, is collected and disposed of safely.
- Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- camphor:

CAS:76- 22- 2 CAS:21368- 68- 3 CAS:464- 49- 3
CAS:464- 48- 2 CAS:8013- 55- 6 CAS:48113- 22- 0
CAS:8022- 77- 3

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
camphor	200 [Unch]	

ODOUR SAFETY FACTOR (OSF)

OSF=7.4 (CAMPHOR)

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

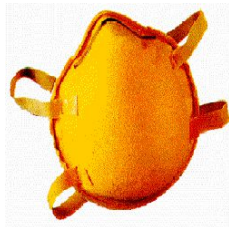
OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

Odour Threshold Value: 0.079 ppm (detection)

The TLV-TWA is thought to be protective against physical irritation of the eyes and nose and anosmia (loss of smell) which occurred in workers at concentrations above 2 ppm. Anosmia may occur in concentrations ranging from 35-194 mg/m³. In addition the limit is thought to be sufficiently low to prevent irritation of the central nervous system (which produces nausea, vomiting, excitement and confusion).

PERSONAL PROTECTION



EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Wear physical protective gloves, eg. leather.

Wear safety footwear.

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
 - (b): filter respirators with absorption cartridge or canister of the right type;
 - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

· Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Air Speed:

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White flammable crystals, penetrating and characteristic odour with pungent aromatic taste, and followed by a sensation of cold. Insoluble in water, soluble in alcohols and acetone.
Sublimes appreciably at room temperature, volatile in steam.

PHYSICAL PROPERTIES

Solid.
Does not mix with water.
Floats on water.

Molecular Weight: 152.2
Melting Range (°C): 174- 180 sublimes

Boiling Range (°C): 204 (sublimes)
Specific Gravity (water=1): 0.99 @ 25 C

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Solubility in water (g/L): Immiscible
pH (1% solution): Not applicable.
Volatile Component (%vol): volatile @ 100C
Relative Vapour Density (air=1): 5.24
Lower Explosive Limit (%): 0.6
Autoignition Temp (°C): 466 (sublimes)
State: Divided solid

pH (as supplied): Not applicable
Vapour Pressure (kPa): 0.024 @ 20 C
Evaporation Rate: Not available
Flash Point (°C): 66 (sublimes)
Upper Explosive Limit (%): 3.5
Decomposition Temp (°C): Not Available
Viscosity: Not Applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Small oral doses of camphor or camphor containing oils may produce a sensation of warmth in the stomach; larger doses may induce nausea and vomiting. Camphor is a central nervous system stimulant. Central nervous system stimulants may produce dyspnea, coughing, bronchospasm and laryngospasm. Muscular involvement may produce symptoms ranging from fasciculation to spasticity or seizures. Headache, dizziness and confusion may also result as can hyperpyrexia or a sensation of warmth. Other symptoms may include nausea, vomiting, diarrhoea and difficult urination. Cardiovascular involvement may produce alterations in blood pressure and arrhythmia.

Agitation and hallucination may be present but systemic poisoning is characterised by epileptiform convulsions punctuated by periods of apnoea and asystole. Postconvulsive depression of the central nervous system follows stimulation. Central nervous system depressants may produce non-specific discomfort, giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may produce unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Neuronal necrosis has been reported in human fatalities. Man appears to be much more susceptible to camphor poisoning than laboratory mammals. The ingestion of 2 gm. generally produces dangerous effects in an adult. Urinary retention, albuminuria and anuria are sometimes described in non-fatal cases but kidney lesions in fatal poisonings are not always prominent.

EYE

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva

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Section 11 - TOXICOLOGICAL INFORMATION

(conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Direct contact with camphor or camphor-containing oils may produce keratitis (inflammation of the cornea).

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Camphor is mainly a local irritant. Symptoms might include reddening and warming of the skin.

INHALED

Inhalation may produce health damage*.

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

Inhalation overexposure to camphor or camphor-containing oils may produce irritation of the eyes and nose, with a risk of loss of smell. Acute exposures affect the central nervous system, resulting in nausea, vomiting, dizziness, agitation and confusion.

Exposure may cause excitement, irrational behavior, fever, cyanosis (blue lips) and unconsciousness. Heavy exposures are reported to produce nausea, anxiety, dizziness, confusion, headache, twitching of facial muscles and spasticity. Severe poisoning produces convulsions and coma.

Camphor produces convulsions by stimulating the cells of the cerebral cortex.

CHRONIC HEALTH EFFECTS

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

The material may accumulate in the human body and progressively cause tissue damage.

Person with pre-existing convulsive disorders, eye and skin diseases, chronic respiratory disease, kidney and liver disease may be more susceptible to symptoms of exposure at potentially hazardous levels.

When the cancer promoter, croton oil, was applied concurrently with camphor to the skin of mice, twice weekly, two carcinomas, one invasive, developed in 2 of 110 animals.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 5000 mg/kg* *[Bronson]
for (+/-) - camphor: [CAS No. 21368- 68- 3]
Intraperitoneal (rat) LD50: 956 mg/kg
Subcutaneous (rat) LD50: 3040 mg/kg
Intraperitoneal (mouse) LD50: 884 mg/kg

IRRITATION

Nil Reported

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Section 11 - TOXICOLOGICAL INFORMATION

Subcutaneous (mouse) LD50: 3020 mg/kg

Section 12 - ECOLOGICAL INFORMATION

Fish LC50 (96hr.) (mg/l): 110

DO NOT discharge into sewer or waterways.

Toxicity Fish: LC50(96)110mg/L

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE SOLID
HAZCHEM: 1[Z]

UNDG:

Dangerous Goods Class: 4.1
UN Number: 2717
Shipping Name: CAMPHOR, synthetic

Subrisk: None
Packing Group: III

Air Transport IATA:

ICAO/IATA Class: 4.1
UN/ID Number: 2717
ERG Code: 3L
Shipping name: CAMPHOR, synthetic

ICAO/IATA Subrisk: None
Packing Group: III

Maritime Transport IMDG:

IMDG Class: 4.1
UN Number: 2717
EMS Number: F- A, S- I
Shipping name: CAMPHOR, synthetic

IMDG Subrisk: None
Packing Group: III

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Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable

No data available for camphor as CAS: 76-22-2, CAS: 21368-68-3, CAS: 464-49-3, CAS: 464-48-2, CAS: 8013-55-6, CAS: 48113-22-0, CAS: 8022-77-3.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name
camphor

CAS
76- 22- 2, 21368- 68- 3, 464- 49 - 3, 464- 48-
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