

# METHAMPHETAMINE HYDROCHLORIDE

Chemwatch Material Safety Data Sheet  
Issue Date: 15-Jun-2009  
NC317ECP

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

METHAMPHETAMINE HYDROCHLORIDE

### SYNONYMS

C10-H15-N.Cl-H, C6H4CH2CH(NHCH3)CH3.HCl, "phenethylamine, N-alpha-dimethyl-, hydrochloride", "phenethylamine, N-alpha-dimethyl-, hydrochloride", "benzeneethanamine, N, alpha-dimethyl-, hydrochloride, (S)-", "d-deoxyephedrine hydrochloride", "d-deoxyephedrine hydrochloride", "d-desoxyephedrine hydrochloride", "d-desoxyephedrine hydrochloride", "(+)-methamphetamine hydrochloride", "(+/-)-methamphetamine hydrochloride (CAS RN: 64-11-9)", "d-methamphetamine chloride", "d-methamphetamine chloride", "methamphetamineium chloride", "methedrine hydrochloride", "methylamphetamine hydrochloride", "d-methylamphetamine hydrochloride", "d-methylamphetamine hydrochloride", "d-N-methyl-beta-phenylisopropylamine hydrochloride", "d-N-methyl-beta-phenylisopropylamine hydrochloride", Adipex, Deofed, Desoxyfed, Desoxyn, Destin, Desyphed, Dexoval, Dextim, Doxyfed, Drinalfa, Efroxine, Eufodrinol, Gerovit, Isophen, Methylisomyn, "Norodin hydrochloride", Pervitin, Philopon, Soxysympamine, Syndrox, Tonedron, "amphetamine-like anorectic/ stimulant"

### PROPER SHIPPING NAME

MEDICINE, SOLID, TOXIC, N.O.S.(contains methamphetamine hydrochloride)

### PRODUCT USE

An indirect-acting sympathomimetic agent with alpha- and beta-adrenergic activity. Produces a profound stimulating effect on the central nervous system, particularly the cerebral cortex. Used clinically in the treatment of narcolepsy and in the treatment of hyperkinetic states in children. Diet suppressant. Amphetamines have been used to overcome the effects of fatigue but such use is considered undesirable. Given by mouth.

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## Section 2 - HAZARDS IDENTIFICATION

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### STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

### POISONS SCHEDULE

S8

#### RISK

» Toxic if swallowed.

#### SAFETY

- » Keep locked up.
- » In case of insufficient ventilation wear suitable respiratory equipment.
- » Use only in well ventilated areas.
- » Keep container in a well ventilated place.
- » Avoid exposure - obtain special instructions before use.
- » To clean the floor and all objects contaminated by this material use water.
- » This material and its container must be disposed of in a safe way.
- » Keep away from food drink and animal feeding stuffs.
- » Take off immediately all contaminated clothing.
- » This material and its container must be disposed of as hazardous waste.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
methamphetamine hydrochloride	51-57-0	>98

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
  - For advice, contact a Poisons Information Centre or a doctor.
  - Urgent hospital treatment is likely to be needed.
  - In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
  - If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
  - If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.
  - Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
    - INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- NOTE: Wear a protective glove when inducing vomiting by mechanical means.

### EYE

- » If this product comes in contact with the eyes:
  - Immediately hold eyelids apart and flush the eye continuously with 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.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - 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

- » The management of overdose with amphetamines generally involves supportive and symptomatic therapy. Sedation is usually sufficient. Forced acid diuresis has been advocated to increase amphetamine excretion but should only be considered in severely poisoned patients and requires close supervision and monitoring.
- MARTINDALE: The Extra Pharmacopoeia, 27th Ed.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- 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.
- Equipment should be thoroughly decontaminated after use.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

### FIRE/EXPLOSION HAZARD

- Combustible solid which burns but propagates flame with difficulty.
  - Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited.; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.
  - A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.
  - Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.
  - Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
  - Build-up of electrostatic charge may be prevented by bonding and grounding.
  - Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
  - All movable parts coming in contact with this material should have a speed of less than
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), hydrogen chloride, phosgene, nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.

1-n

### FIRE INCOMPATIBILITY

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

### HAZCHEM: 2X

### Personal Protective Equipment

Gas tight chemical resistant suit.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### MINOR SPILLS

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and 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.

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

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure 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 contact with incompatible materials.
  - When handling, DO NOT eat, drink or smoke.
  - Keep containers securely sealed when not in use.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately. Launder contaminated clothing before re-use.
  - Use good occupational work practice.
  - Observe manufacturer's storing and handling recommendations.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers
  - In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

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Section 7 - HANDLING AND STORAGE

## SUITABLE CONTAINER

- Glass container is suitable for laboratory quantities.
- Packaging as recommended by manufacturer.
- Check that containers are clearly labelled.
- Tamper-proof containers.
- Polyethylene or polypropylene containers.
- Metal drum with sealed plastic liner.

For low viscosity materials

- 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) and solids (between 15 C deg. and 40 deg C.):

- Removable head packaging;
  - Cans with friction closures and
  - low pressure tubes and cartridges
- may be used.

Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages \*.

In addition, where inner packagings are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage \*.

\* unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

## STORAGE INCOMPATIBILITY

- Avoid strong bases.
  - Avoid reaction with oxidising agents.
- Avoid exposure to light and air.

## STORAGE REQUIREMENTS

» NOTE: Special security requirements may be mandated under Federal/State Regulation(s).

- Store in original containers.
- Store in vault fitted with warning devices or detectors recommended by various Federal/State authorities.
- Store in vault used only for the purpose of storage of drugs of addiction.
- Vault must be locked at all times except when the materials stored therein are required.
- Keep storage area free from debris, wastes and combustibles.
- Keep dry.
- Keep containers securely sealed.
- Protect containers against physical damage.
- Check regularly for spills and leaks.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

The following materials had no OELs on our records

- methamphetamine hydrochloride: CAS:51- 57- 0 CAS:51176- 61- 5 CAS:64- 11- 9

### MATERIAL DATA

» It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

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NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

Airborne particulate or vapour must be kept to levels as low as is practicably achievable given access to modern engineering controls and monitoring hardware. Biologically active compounds may produce idiosyncratic effects which are entirely unpredictable on the basis of literature searches and prior clinical experience (both recent and past).

### PERSONAL PROTECTION

#### EYE

» For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:

- Chemical goggles
- Face shield. Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and 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

» 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.
- Rubber gloves (nitrile or low-protein, powder-free latex). Employees allergic to latex gloves should use nitrile gloves in preference.
  - Double gloving should be considered.
  - PVC gloves.
  - Protective shoe covers.
  - Head covering.

#### OTHER

- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.
- Eye wash unit.
- Ensure there is ready access to an emergency shower.
- For Emergencies: Vinyl suit.
- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

selected and fit tested as part of a complete respiratory protection program.

- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

### 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 site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

» For potent pharmacological agents:

Powders

To prevent contamination and overexposure, no open handling of powder should be allowed.

- Powder handling operations are to be done in a powders weighing hood, a glove box, or other equivalent ventilated containment system.
- In situations where these ventilated containment hoods have not been installed, a non-ventilated enclosed containment hood should be used.
- Pending changes resulting from additional air monitoring data, up to 300 mg can be handled outside of an enclosure provided that no grinding, crushing or other dust-generating process occurs.
- An air-purifying respirator should be worn by all personnel in the immediate area in cases where non-ventilated containment is used, where significant amounts of material (e.g., more than 2 grams) are used, or where the material may become airborne (as through grinding, etc.).
- Powder should be put into solution or a closed or covered container after handling.
- If using a ventilated enclosure that has not been validated, wear a half-mask respirator equipped with HEPA cartridges until the enclosure is validated for use.

Solutions Handling:

- Solutions can be handled outside a containment system or without local exhaust ventilation during procedures with no potential for aerosolisation. If the procedures have a potential for aerosolisation, an air-purifying respirator is to be worn by all personnel in the immediate area.
- Solutions used for procedures where aerosolisation may occur (e.g., vortexing, pumping) are to be handled within a containment system or with local exhaust ventilation.
- In situations where this is not feasible (may include animal dosing), an air-purifying respirator is to be worn by all personnel in the immediate area. If using a ventilated enclosure that has not been validated, wear a half-mask respirator equipped with HEPA cartridges until the enclosure is validated for use.
- Ensure gloves are protective against solvents in use.

Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.

HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.

Barrier protection or laminar flow cabinets should be considered for laboratory scale handling.

When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6-12 air changes per hour) is preferred. Quantities up to 1 kilogram may require a designated laboratory using fume hood, biological safety cabinet, or approved vented enclosures. Quantities exceeding 1 kilogram should be handled in a designated laboratory or containment laboratory using appropriate barrier/containment technology.

Manufacturing and pilot plant operations require barrier/ containment and direct coupling technologies.

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Barrier/ containment technology and direct coupling (totally enclosed processes that create a barrier between the equipment and the room) typically use double or split butterfly valves and hybrid unidirectional airflow/ local exhaust ventilation solutions (e.g. powder containment booths). Glove bags, isolator glove box systems are optional. HEPA filtration of exhaust from dry product handling areas is required.

Fume-hoods and other open-face containment devices are acceptable when face velocities of at least 1 m/s (200 feet/minute) are achieved. Partitions, barriers, and other partial containment technologies are required to prevent migration of the material to uncontrolled areas. For non-routine emergencies maximum local and general exhaust are necessary.

The need for respiratory protection should also be assessed where incidental or accidental exposure is anticipated: Dependent on levels of contamination, PAPR, full face air purifying devices with P2 or P3 filters or air supplied respirators should be evaluated.

The following protective devices are recommended where exposures exceed the recommended exposure control guidelines by factors of:

10; high efficiency particulate (HEPA) filters or cartridges

10-25; loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator.

25-50; a full face-piece negative pressure respirator with HEPA filters

50-100; tight-fitting, full face-piece HEPA PAPR

100-1000; a hood-shroud HEPA PAPR or full face-piece supplied air respirator operated in pressure demand or other positive pressure mode.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

White or almost white, odourless, crystalline powder with bitter taste; mixes with water, alcohol, chloroform.  
+/-methamphetamine hydrochloride mp 153-156 C.

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

Molecular Weight: 185.72

Melting Range (°C): 170- 175

Solubility in water (g/L): Miscible

pH (1% solution): Not available

Volatile Component (%vol): Negligible

Relative Vapour Density (air=1): Not applicable

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): Not available.

State: Divided solid

Boiling Range (°C): Not available

Specific Gravity (water=1): Not available.

pH (as supplied): Not applicable

Vapour Pressure (kPa): Negligible

Evaporation Rate: Not applicable

Flash Point (°C): Not available

Upper Explosive Limit (%): Not available.

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.



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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

» Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Side-effects of treatment with the amphetamines are associated with overstimulation of the central nervous system and include insomnia, nervousness, restlessness, irritability and a sense of well-being. Fatigue and depression may follow. Other signs and symptoms include dryness of the mouth, loss of appetite, abdominal cramps and other gastrointestinal disturbances, headache, dizziness, tremor, sweating, fast heart rate, palpitations, increased blood pressure, difficult urination, altered sex drive and impotence. Psychotic reactions and muscle damage, associated with kidney complications, have also occurred. Acute overdose cause more severe effects, and, is often accompanied by high fever, dilated pupils, very brisk reflexes, chest pains, heartbeat irregularities, confusion, panic states, aggressive behaviour, hallucinations, delirium, convulsions, depression of breathing, coma, circulation collapse and death.

Phenethylamines produce effects similar to amphetamines. They excite the nervous system, causing shortness of breath, cough, narrowing of the airways and throat spasms. Muscle involvement may cause twitches, spasticity and seizures. There may also be headache, dizziness, confusion, a feeling of warmth, nausea, vomiting, diarrhoea, and difficulty in urination. Blood measure may be altered and there may be irregular heart rhythms. Anorectic agents can cause overstimulation of the central nervous system, leading to hyperventilation, tremor, motor difficulties, dilated pupils, blurred vision, insomnia and dream disturbances. They also cause weakness, fatigue, drowsiness, depression, inco-ordination, difficulty speaking, confusion and hallucinations. Other effects include loss of white blood cells, bone marrow depression and reduction in the number of granulocytes, as well as hair loss, bruising and muscle pain. Cardiovascular effects include constriction of blood vessels, change in blood pressure, rapid pulse, irregular heart rhythm, palpitations and possible collapse of circulation. Digestive symptoms include dry mouth, foul taste, loss of appetite, nausea, flushing, sweating, vomiting, diarrhoea or constipation, and trunk pain. Hypersensitive individuals may show hives, rash, skin redness and burning sensations. There may be coma and convulsions, leading to death.

Sympathomimetics, which mimic stimulation of the sympathetic nerves, cause a stimulatory effect on the heart and central nervous system, constriction of blood vessels supplying the skin and mucous membranes, dilation of blood vessels supplying muscles of movement, and widening of the airways. These drugs may act on the receptor or the release of the neurotransmitter noradrenaline. Central nervous effects include fear (feeling of "impending disaster"), anxiety, restlessness, tremor, sleep disturbance, confusion, irritability, weakness and hallucinations. There can be nausea and vomiting, loss of appetite, problems with urination, shortness of breath, disturbance in glucose levels and acid-base balance, sweating, excess saliva production and headache. Cardiovascular effects include changes in heart rate, irregularities in heart rhythm, low blood pressure with dizziness, fainting and flushing, or high blood pressure. Aerosols may cause death due to irregularities in the rhythm of the ventricles (two of the four chambers of the heart). Inhaling the material may cause death of heart tissue and heart attack.

Stimulation of heart beta-1 adrenergic receptors may cause increased heart rate and irregularity of heartbeat, tightness and a constricting pain in the chest, palpitations and heart stoppage; low blood pressure with dizziness, fainting and flushing may also occur. Beta-1 receptors mediate the action of sympathomimetics; beta-2 receptors control dilation of the airways.

Stimulating alpha-adrenergic receptors causes blood vessels to dilate, sometimes to the extent that gangrene occurs in the fingers and toes, and there is increased blood pressure. This can also cause swelling of the lungs and bleeding in the brain. The heart rate may be slowed. Two classes of receptors (alpha-1 and alpha-2) are thought to be responsible for mediating these effects. The former are thought to be responsible for causing the constriction of blood vessels when sympathomimetics are given; the latter for reduction of bowel activity when alpha-adrenergic agonists are given.

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## Section 11 - TOXICOLOGICAL INFORMATION

### EYE

» Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

### SKIN

» 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. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material. 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.

### INHALED

» 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 of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

Adverse effects associated with the administration of central nervous system stimulants include labored breathing, coughing, narrowed airways, chest tightness, and throat spasm. Muscular involvement may produce contraction of small localised muscle fibres (visible through the skin) or seizures. Headache, dizziness, fever and confusion may also result. Other symptoms may include nausea, vomiting, diarrhoea and difficulty in urination, alterations in blood pressure and irregular heart beat.

### CHRONIC HEALTH EFFECTS

» Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Long-term use of amphetamines can lead to tolerance developing to some of its effects, leading to an urge to increase dose and habituation. However, amphetamines generally do not cause physical dependence. Amphetamine abuse has resulted in gnashing of the teeth, personality disorders, compulsive and stereotyped behaviour, and may cause toxic psychosis with hallucinations of sight and hearing and paranoid delusions. In high doses, stimulants may stunt the growth of children. Abuse of intravenous methylamphetamine has been associated with heart disorders and kidney poisoning.

Chronic exposure to phenethylamines excite the central nervous system and induce tolerance; in extreme cases they produce amphetamine-like responses including personality changes, compulsive and stereotyped behaviour and may induce psychosis with auditory and visual hallucinations and paranoid delusions.

Chronic effects associated with the use of anorectic stimulants include severe skin disorders, inability to sleep, irritability, hyperactivity, personality changes, urinary frequency, painful urination and impotence.

### TOXICITY AND IRRITATION

» unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### TOXICITY

Subcutaneous (rat) LD50: 10.93 mg/kg  
Intraperitoneal (mouse) LD50: 15 mg/kg  
Subcutaneous (rat) LD50: 7.56 mg/kg  
Intravenous (mouse) LD50: 6.3 mg/kg  
Oral (g.pig) LD50: 90 mg/kg

IRRITATION  
Nil Reported

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## Section 11 - TOXICOLOGICAL INFORMATION

» Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Convulsions, excitement, transplacental tumourigenesis, effects on newborn, maternal effects, specific developmental abnormalities (endocrine system, central nervous system, musculoskeletal system) recorded.

Neoplastic by RTECS criteria

## Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant: Not Determined

» DO NOT discharge into sewer or waterways.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
methamphetamine hydrochloride			LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

• Containers may still present a chemical hazard/ danger when empty.

• Return to supplier for reuse/ recycling if possible.

Otherwise:

• If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.

• Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

• Reduction,

• Reuse

• Recycling

• Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

• DO NOT allow wash water from cleaning or process equipment to enter drains.

• It may be necessary to collect all wash water for treatment before disposal.

• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.

• Where in doubt contact the responsible authority.

Valuable substance, hold all residues for recovery. Disposal of the material must be carried out in accordance with the requirements of the relevant Federal/State Act(s) or Code(s) regulating the disposal of Drugs of Addiction.

• Consult manufacturer/supplier for recycling options.

• Decontaminate empty containers with water; incinerate plastic bags.

• DO NOT reuse containers. Bury empty containers in an authorised landfill.

• 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)

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## Section 13 - DISPOSAL CONSIDERATIONS

- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC  
HAZCHEM: 2X (ADG7)

### ADG7:

Class or division:	6.1	Subsidiary risk:	None
UN No.:	3249	UN packing group:	III
Special provisions:	221, 223	Packing Instructions:	None
Notes:	None	Limited quantities:	5 kg
Packagings and IBCs -	P002	Packagings and IBCs -	None
Packing instruction:		Special packing provisions:	

Shipping Name: MEDICINE, SOLID, TOXIC, N.O.S. (contains methamphetamine hydrochloride)

### Land Transport UNDG:

Class or division:	6.1	Subsidiary risk:	None
UN No.:	3249	UN packing group:	III
Shipping Name: MEDICINE, SOLID, TOXIC, N.O.S. (contains methamphetamine hydrochloride)			

### Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	3249	Packing Group:	III
Special provisions:	A3		

Shipping Name: MEDICINE, SOLID, TOXIC, N.O.S.(CONTAINS METHAMPHETAMINE HYDROCHLORIDE)

### Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	3249	Packing Group:	III
EMS Number:	F- A, S- A	Special provisions:	221 223 944
Limited Quantities:	5 kg	Marine Pollutant:	Not Determined
Shipping Name: MEDICINE, SOLID, TOXIC, N.O.S.(contains methamphetamine hydrochloride)			

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: S8

### REGULATIONS

methamphetamine hydrochloride (CAS: 51-57-0) is found on the following regulatory lists;  
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)

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## Section 15 - REGULATORY INFORMATION

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix D  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 8  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 9  
United Nations List of psychotropic substances under international control - Pure drug content of bases and salts

methamphetamine hydrochloride (CAS: 51176-61-5) is found on the following regulatory lists;  
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix D  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 8  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 9  
United Nations List of psychotropic substances under international control - Pure drug content of bases and salts

methamphetamine hydrochloride (CAS: 64-11-9) is found on the following regulatory lists;  
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix D  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 8  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 9  
United Nations List of psychotropic substances under international control - Pure drug content of bases and salts

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name

CAS

methamphetamine hydrochloride

51- 57- 0, 51176- 61- 5, 64- 11- 9

» Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

» The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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*This is the end of the MSDS.*