MATERIAL SAFETY DATA SHEET

IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

Name of product APOMORPHINE HYDROCHLORIDE HEMIHYDRATE

Application Therapeutic agent, Expectorant

Company identification Macfarlan Smith Limited
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COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL DESCRIPTION

A white crystalline powder.
FORMULA:C17H17NO2HCL 1/2H2O.
SYNONYMS: N-methyl norapomorphine hydrochloride.
(6aR)-5,6,6a,7-tetrahydro-6-methyl-4H-dibenzo(d,e,g) quinoline-10,11-diol Hydrochloride.
6a,b-aporphine-10,11-diol hydrochloride hemihydrate
Apomorphinium chloride.
OTHER APPLICATIONS:
Treatment in Parkinsons' disease.
Also used as an emetic.

HAZARDOUS INGREDIENTS

NAME OF SUBSTANCE :Apomorphine Hydrochloride.
ASSAY :98.5-100.5%.
CAS NUMBER :314-19-2 (Anhydrous).
:41372-20-7 (Hemihydrate).
CHIPS CLASSIFICATION:Xn: HARMFUL.
RISK PHRASES :20/22,42/43.
SAFETY PHRASES :24,36/37,45.

HAZARDS IDENTIFICATION

Apomorphine Hydrochloride is harmful on ingestion and by inhalation. It is a weak skin and respiratory sensitiser and may cause contact dermatitis.
SYMPTOMS:
EYES:Redness and irritation.
SKIN:Redness and irritation, possible dermatitis.
INHALATION/
INGESTION :Nausea, vomiting,restlessness, euphoria, stimulation and depression of CNS, respiratory depression, pinpoint or dilated pupils, circulatory failure, convulsions coma and death.

FIRST AID MEASURES

EYE CONTACT

Flush with plenty of gently flowing clean water for at least 15 minutes.
Keep eyelids wide open and apart.
Obtain medical attention if eyes are irritated.

SKIN CONTACT

Try to prevent generation and/or inhalation of dust. Wash affected areas with plenty of soap and water.
Obtain medical attention.

INHALATION

Remove casualty to fresh air and keep warm and at rest.
If breathing is difficult then give oxygen.
If breathing ceases then give artificial respiration.
Obtain medical attention.

INGESTION

Wash out mouth. Give plenty of clean water to drink.
Obtain medical attention.
Never attempt to give anything by mouth to a semi-conscious or unconscious person.
See other information.

FIRE FIGHTING MEASURES

FIRE FIGHTING

This product is combustible only if heated or exposed to a flame.
Products of decomposition may include toxic fumes of Nitrogen Oxides and Hydrogen Chloride.

EXTINGUISHING MEDIA

Waterspray or dry chemical powder or foam fire extinguishers should be used.

FIRE FIGHTING MEASURES

Fireproof overalls/suit boots and gloves should be worn with self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

SPILLAGE

Solid Spillage: Collect the spillage carefully e.g. using a vacuum cleaner fitted with a suitable filter to prevent blowing of fine particles back into the atmosphere e.g. Type H (BS5415). Transfer the collected material into a suitably labelled and sealable container for disposal.
Evacuate unprotected persons from the area.
Wash contaminated area with plenty of water.
If a lot of dust has been created by either the spillage itself or during cleaning up, thoroughly ventilate the area before allowing unprotected re-entry.

SPILLAGE

Refer to information provided in Disposal section.

SPILLAGE PPE

Wear an airhood or approved respirator, disposable overalls, boots and rubber gloves.

STORAGE AND HANDLING

STORAGE

This material should be kept in clearly labelled airtight and lightproof containers and stored in a dry area below 25 degrees C.
Preferably store under Nitrogen.

HANDLING

Personal protective equipment should always be worn when handling this material.
Avoid breathing dust and contact with skin, eyes and clothing.
Use techniques which minimise the risk of raising dust.
Wash hands and arms thoroughly after use.
Do not consume food, drink or smoke whilst handling this material.

EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

Occupational Exposure Standard (in-house) 0.1 mg/m3 8hr TWA.

ENGINEERING MEASURES

This product should preferably be used in enclosed plant fitted with suitable extraction ventilation.
Ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity as a prevention against dust explosions.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

If dust concentrations are expected to be high then an airsuit should be worn.
In other situations an airhood or suitable respirator must be worn.

HAND PROTECTION

Rubber or plastic gloves.

EYE PROTECTION

Safety spectacles with side shields

SKIN PROTECTION

Disposable overalls (dusts and powders)
and rubber wellington boots
or as respiratory protection.

PHYSICAL/CHEMICAL PROPERTIES

Appearance	White crystalline powder.
Odour	
pH	4-5 (1% solution in water).
Boiling point	NA.
Melting point	195 degrees C (decomposes at 225 degrees C)
Flash point	NA
Flammability	NA
Auto-flammability	NA
Explosive properties	NA
Oxidising properties	NA
Vapour pressure	NA
Relative density	Not known.
Solubility in water	1:50 in cold water. 1:20 in water at 80 degrees C.
Solubility in fat	
Solubility in solvent	1:50 Ethanol,slightly soluble in Ether, practically insoluble in Chloroform.
Partition coefficient	Not known.
Other Data	

STABILITY AND REACTIVITY

Stability

Apomorphine Hydrochloride is stable at ambient temperatures but degrades on exposure to light and air.

Conditions to avoid

Exposure to light and air (solutions turn green/brown).

Materials to avoid

Alkalies, Iodides, Tannin, Iron salts and oxidising agents.

Decomposition products

On thermal decomposition or combustion Apomorphine Hydrochloride evolves toxic Nitrous oxides and Hydrogen Chloride fumes.

TOXICOLOGICAL INFORMATION

Toxicity Data:

Mutagenic data:
mutation in microorganisms Salmonella Typhimurium 20 microg/plate (Ref 9 and 11) (Anhydrous).
Microsomal mutagenicity assay Salmonella Typhimurium 200 microgramme/plate

(Ref 9 & 11).
Reproductive data:
Subcutaneous rat TDLO 7 mg/kg female 13-15D post - reproductive effects. (Apomorphine base) (Ref 1 & 8).
Toxic data:
Intraperitoneal mouse LD50 0.145 mg/kg (Ref 9 & 10) Anhydrous .
Intravenous mouse LD50 38 mg/kg (Ref 1, 2 & 9) Anhydrous.
Intraperitoneal mouse LD50 247 mg/kg (Ref 1 & 3).
Intravenous mouse LD50 71 mg/kg (Ref 1 & 4).
Oral mouse LD50 300 mg/kg (Apomorphine base) (Ref 1 & 5).
Intravenous mouse LD50 56 mg/kg (Apomorphine base) (Ref 1 & 6).
Intraperitoneal mouse LD50 160 mg/kg (Apomorphine base) (Ref 1 & 7).

Short term effects:

Apomorphine hydrochloride is harmful on ingestion and inhalation. Signs and symptoms are persistent vomiting, stimulation and depression of the CNS respiratory depression, acute circulatory failure, coma and death. Other effects such as euphoria, restlessness, tremors and drowsiness have been reported. Apomorphine Hydrochloride is a weak skin and respiratory sensitiser and may cause contact dermatitis. Small doses may cause a change in mood, cloudy thinking and drowsiness. It may be absorbed through an injection site and via mucous membranes.

Long term effects:

Apomorphine Hydrochloride is not known to be mutagenic or carcinogenic but it has caused limb abnormalities in chicken embryos. One experimental result shows that Apomorphine may cause reproductive effects.

ECOLOGICAL INFORMATION

Assessment

There is no information on the potential of Apomorphine Hydrochloride to cause environmental problems but there is the potential to cause air pollution if its' decomposition products were evolved in large quantities.

Ecotoxicity data

No data available.

DISPOSAL CONSIDERATIONS

Disposal must conform to relevant legislation.
This material should be incinerated in a licenced facility.

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TRANSPORT INFORMATION

UN Number	1544 (Alkaloid, solid,NOS and Alkaloid Salts, solid,NOS).
EEC Regulations	EINECS NO:2052430 (Anhydrous salt).
IATA/ICAO	Not classified.
Packaging	Typical Packaging: 10g glass bottle. 100g glass bottle. 500g glass bottle.

REGULATORY INFORMATION

CLASSIFICATION OF SUBSTANCE FOR SUPPLY

Xn; Harmful (St Andrew's Cross)

RISK PHRASES

R20/22: Harmful by inhalation and if swallowed.
R42/43: May cause sensitisation by inhalation and skin contact.

SAFETY PHRASES

S24: Avoid contact with skin.
S36/37: Wear suitable protective clothing and gloves.
S46: If swallowed seek medical advice immediately and show this container or label.

CLASSIFICATION OF SUBSTANCE FOR CARRIAGE

Non-hazardous for carriage.

REGULATORY

The Control of Substances Hazardous to Health Regulations (UK) apply. The information given in this document has been compiled on the basis of best available knowledge in accordance with the requirements of The Chemical(Hazards.Information & Packaging) CHIP2 Regulations 1994. It does not imply that the information is accurate or complete in all cases. It is the users responsibility to satisfy themselves as to the suitability of the information for his/her own particular use.

OTHER INFORMATION

SPECIAL FIRST AID MEASURES

Emergency Medical Treatment (Only to be undertaken by qualified medical Personnel):
Treat symptomatically. Consider use of Naloxone to treat excessive vomiting and CNS and respiratory depression.

MISCELLANEOUS

Apomorphine Hydrochloride has been reported in the TSCA Inventory.

REFERENCES

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13. The Carriage of Dangerous Goods by Road and Rail (CPL) Regulations 1994 and associated guidance.
14.The Customs and Excise Integrated Tariff of the United Kingdom.

THE INFORMATION IN THIS DATA SHEET IS GIVEN TO THE BEST OF OUR KNOWLEDGE

Reference number: 4150APO 1

Replaces : **Date: 07-JUN-1995**

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