



SHANGHAI BOSMAN INDUSTRIAL CO., LTD.

Add: Room 1804, No. 1611, North Sichuan Road, Hongkou District, Shanghai, P.R. China.

Tel: +86 21 63065878 | **Fax:** +86 21 63065878 | **E-mail:** info@bosmangroup.com

Website: www.bosmanagrochem.net

Version: 1.0 Issue date: June 10, 2023

MATERIAL SAFETY DATA SHEET OF

WARFARIN 95% TC

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product name: Warfarin 95% TC

Supplier: Shanghai Bosman Industrial Co., Ltd

Street address: No. 1611, North Sichuan Road, Hongkou, Shanghai R.P. China

Tel: + 86 21 63065878

Fax: + 86 21 63065878

Recommended use: Rodenticide

2. HAZARDS IDENTIFICATION

Emergency Overview

It inhibits prothrombin formation which results in decreased blood clotting capacity.

Warning symptoms:

Abdominal pain Gum bleeding, Nose bleeding, Bruising and haemorrhage formation

Potential Health Effects

Ingestion

Warfarin : Effects due to ingestion may include: Internal bleeding, The product inhibits prothrombin formation which results in decreased blood clotting capacity..

Repeated exposure

Warfarin: May cause harm to the unborn child. Adverse effects from repeated exposure may include: Abnormal blood clotting with easy bruising or bleeding Internal abdominal bleeding which could produce abdominal pain, bloating, low blood pressure, dizziness, light-headedness, fainting, sweating, shortness of breath, vomiting blood, blood in stools

Warfarin: Bone marrow Blood

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.



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3.COMPOSITION/INFORMATION ON INGREDIENTS

Other ingredients determined not to be hazardous

INGREDIENT	CAS NO	PROPORTION(%, w/w)
Warfarin	81-81-2	95 min
Other ingredients	--	Up to 100%

4. FIRST AID MEASURES

Skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. Discard contaminated shoes.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids. Call a poison control center or doctor for treatment advice.

Inhalation : Move to fresh air. Oxygen or artificial respiration if needed. Call a physician immediately.

Ingestion : Rinse mouth. Induce vomiting if person is conscious. Immediately give large quantities of water to drink. Never give anything by mouth to an unconscious person. Obtain medical attention.

General advice : Remove from exposure, lie down. When symptoms persist or in all cases of doubt seek medical advice.

Notes to physician : Vitamin K1 is a specific antidote.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash point : does not flash

Fire and Explosion Hazard : Hazardous decomposition products Carbon dioxide (CO₂)
Carbon monoxide

Suitable extinguishing media : Water spray, Dry powder, Foam, Carbon dioxide (CO₂)

Firefighting Instructions : Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses.



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6. ACCIDENT RELEASE MEASURES

Safeguards (Personnel) : Evacuate personnel to safe areas. Ensure adequate ventilation.

Wear

suitable protective equipment.

Spill Cleanup : Shovel into suitable container for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

Accidental Release Measures : Do not flush into surface water or sanitary sewer system. Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Handling (Personnel) : Avoid contact with skin, eyes and clothing. Do not breathe dust.

Provide

appropriate exhaust ventilation at places where dust is formed. Wear self-contained breathing apparatus and protective suit. Avoid contact with skin, eyes and clothing. Do not breathe dust. Wash hands before breaks and immediately after handling the product. Discard contaminated shoes. Wash contaminated clothing before re-use. Routinely monitor blood clotting capacity of personnel handling this product.

Handling (Physical Aspects) : Keep away from open flames, hot surfaces and sources of ignition.

Storage : Keep containers tightly closed in a cool, well-ventilated place. Keep away from oxidising agents and strongly acid or alkaline materials. Storage temperature : 15 - 30 °C (59 - 86 °F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation.

Personal protective equipment

Respiratory protection : In the case of respirable dust, use self-contained breathing apparatus.

Respirator with a particle filter (EN 143)

Hand protection : Material: Protective gloves



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Eye protection : Safety goggles Face-shield

Skin and body protection : Complete suit protecting against chemicals

Complete head face and neck protection: Boots, Apron

Exposure Guidelines

Exposure Limit Values

Warfarin

PEL: (OSHA) 0.1 mg/m³ 8 hr. TWA

TLV (ACGIH) 0.1 mg/m³ TWA

AEL * (DUPONT) 0.002 mg/m³ 8 & 12 hr. TWA, Skin

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Powder

Color : white

Odor : none

pH : 5.6 at > 0.2 g/l

Melting point/range : 159 - 164 °C (318 - 327 °F)

Vapour Pressure : 0.00003 hPa at 20 °C (68 °F)

Water solubility : 0.017 g/l at 25 °C (77 °F)

Partition coefficient: noctanol/water : log Pow: 2.7

10. STABILITY AND REACTIVITY

Conditions to avoid : Direct sources of heat. Exposure to light.

Incompatibility : Oxidizing agents Acids, alkalies

Hazardous decomposition products : Carbon monoxide, Carbon dioxide (CO₂)

Hazardous reactions : None reasonably foreseeable.

11. TOXICOLOGICAL INFORMATION

Dermal LD₅₀ : 40 mg/kg , rat

Oral LD₅₀ : 5.6 mg/kg , rat

Inhalation 4 h LC₅₀ : 0.005 mg/l , rat

Skin irritation : No irritation



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Eye irritation : No irritation

Skin sensitization : Did not cause sensitization on laboratory animals., guinea pig

Repeated dose toxicity : **human Target Organs:** Blood

Prolonged blood-clotting time, Abnormal formation of blood cells, bone marrow changes

Carcinogenicity : Overall weight of evidence indicates that the substance is not carcinogenic.

Mutagenicity : Did not cause genetic damage in animals.

Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others. Did not cause genetic damage in cultured bacterial cells.

Teratogenicity : Animal testing showed effects on embryo-foetal development at levels below those causing maternal toxicity.

Foetal malformations

Reduced embryo-foetal viability

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Warfarin

Cell multiplication inhibition test NOEC : *Scenedesmus capricornutum* (fresh water algae) 0.073 mg/l

Growth inhibition NOEC : *Scenedesmus capricornutum* (fresh water algae) 0.34 mg/l

Warfarin

LC50 : *Oncorhynchus mykiss* (rainbow trout) 16 mg/l

96 h LC50 : *Oncorhynchus mykiss* (rainbow trout) 65 mg/l

LC50: *Lepomis macrochirus* (Bluegill sunfish) 17.5 mg/l

EC50: *Daphnia magna* (Water flea) 17 mg/l

Environmental Fate

Biodegradability : Not readily biodegradable.

13. DISPOSAL CONSIDERATION

Waste Disposal : Dispose of as special waste in compliance with local and national regulations.

Environmental Hazards : If recycling is not practicable, dispose of in compliance with



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local regulations.

14. TRANSPORT INFORMATION

DOT

UN number : 3027

Proper shipping name : Coumarin derivative pesticides, solid, toxic (Warfarin)

Class : 6.1

Packing group : I

IATA

UN number : 3027

Proper shipping name : Coumarin derivative pesticide, solid, toxic (Warfarin)

Class : 6.1

Packing group : I

IMDG

UN number : 3027

Proper shipping name : Coumarin derivative pesticide, solid, toxic (Warfarin)

Class : 6.1

Packing group : I

15. REGULATORY INFORMATION

Follow local, international decree, regulation and laws.

16. OTHER INFORMATION

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This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of the how the product will be



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handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.

-- END OF MSDS --