



MAKHTESHIM
CHEMICAL WORKS LTD.

MATERIAL SAFETY DATA SHEET

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Revised edition no : 1

Date : 26/1/2005

Supersedes : 0/0/0

MERPAN 50 SC

R-8888.DPD

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Trade name : MERPAN 50 SC
Chemical formula : Captan : C₉H₈Cl₃NO₂S
1,2,3,6-Tetrahydro-N(trichloromethylthio)phthalimide
Use : Fungicide
Company identification : Makhteshim Chemical Works Ltd.
PO Box 60
Beer Sheva 84100 Israel.
Fax : +972-8-6296848
Emergency phone nr : 972-3-6106666 Subscription no. 36789 (Makhteshim)

2. COMPOSITION / INFORMATION ON INGREDIENTS

This product is considered to be hazardous and contains hazardous components.

Substance name	Value(s)	CAS No	EC No	Index No	Classification
Captan (ISO)	500 g/l	000133-06-2	205-087-0	613-044-00-6	Carc. Cat. 3; R40 T; R23 Xi; R41 R43 N; R50
Condensed naphthalene sulfonate	4 %	----	----	----	Xi; R36/38

3. HAZARDS IDENTIFICATION

Human Health Hazards : Irritating to eyes.
Limited evidence of a carcinogenic effect.
May cause sensitization by skin contact.
Environmental hazard : Very toxic to aquatic organisms.

4. FIRST AID MEASURES

Undesirable human health effects

Skin contact : Repeated exposure may cause contact dermatitis.
Eye contact : Redness , tears .
First aid
Inhalation : Remove victim to fresh air. Consult a doctor in the event of any complaints.
Ingestion : Do not induce vomiting. Wash out mouth with plenty of water. . Never give anything by mouth to an unconscious person. Consult a doctor.
Skin contact : Remove affected clothing and wash all exposed skin area with soap and water, followed by warm water rinse. Consult a doctor in the event of any complaints.
Eye contact : In case of eye contact, immediately rinse with clean water for 10-15 minutes. If pain persists, consult an eye specialist.
Note to physician : No specific antidote known. Treat symptomatically and give supportive therapy. If ingested perform gastric lavage and administer activated charcoal.

5. FIRE-FIGHTING MEASURES

Extinguishing media : For small fire : foam , dry chemical , carbon dioxide .
For large fire: foam , water fog , water spray .
Special procedures : Fight fires from a protected location . Dike fire control water for later disposal.
Special exposure hazards : Thermal decomposition generates : carbon dioxide , carbon monoxide , nitrogen oxides , sulfur oxide , hydrogen chloride , CSCl₂ .
Protection against fire : Wear suitable protective clothing. Self-contained breathing apparatus.



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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Use appropriate protection (see section 8).
- Environmental precautions** : Dispose of this material and its container at hazardous or special waste collection point , If the product has contaminated surface water, inform the appropriate authorities. Contaminated soil layers have to be dug out.
- After spillage and/or leakage** : In the event of minor spillage: Absorb in sand or other inert material . Use appropriate container to avoid environmental contamination.
In the event of major spillage: Collect and contain as much free liquid as possible. Dike spills using absorbent or impervious materials such as sand or clay for later disposal.

7. HANDLING AND STORAGE

- Handling** : Do not breathe fumes . Avoid contact with skin and eyes.
- Storage** : Keep locked up. Keep container tightly closed. Keep only in the original container in a cool, well ventilated place.
- Packing** : Multi-layer high density polyethylene extrusion blow containers .

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Industrial hygiene** : Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower . Wash clothing before re-using. Wash hands thoroughly after handling.
- Occupational Exposure Limits**
- TLV-TWA [mg/m3]** : (USA) Captan : 5, A3 (1996)
- **Respiratory protection** : During spraying wear suitable respiratory equipment.
- **Skin protection** : Wear protective clothing and chemical resistant boots .
- **Hand protection** : Wear suitable gloves.
- **Eye protection** : Chemical goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : Liquid
- Colour** : Off-white
- Odour** : Faint characteristic
- pH value** : 3.5 - 7.5
- Specific gravity** : 1.235 - 1.270
- Molecular weight** : Captan : 300.61
- Melting point [°C]** : Captan : 158 - 164
- Final boiling point [°C]** : Captan : Decomposes
- Vapour pressure** : Captan : $2.01 \times (10)^{-4}$ Pa (50°C - Pure)
- Solubility in water** : Captan : Insoluble
- Flash point [°C]** : Not flammable
- Explosion limits** : Not explosive
- Log P octanol** : Captan : KOW = 610

10. STABILITY AND REACTIVITY

- Physico-chemical stability** : Stable under normal conditions.
- Hazardous decomposition products** : Thermal decomposition generates : carbon dioxide , carbon monoxide , nitrogen oxides , sulfur oxide , hydrogen chloride , CSCl₂ .
- Hazardous reactions** : Alkali materials, such as lime and Bordeaux mixture will reduce fungicidal activity



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10. STABILITY AND REACTIVITY (continued)

Hazardous Polymerization : Will not occur.
Conditions to avoid : Protect from (sun)light , sources of heat , open flame .

11. TOXICOLOGICAL INFORMATION

Rat oral LD50 : > 6000 mg/kg
Rat dermal LD50 : > 2000 mg/kg
Rat inhalation LC50 [mg/l/4h] : > 4.5
Dermal irritation (rabbit) : Mildly irritating
Eyes irritation (rabbit) : Moderately irritating
Sensitization : Guinea pig maximization test: Extreme sensitizer
Carcinogenicity : Captan : A two-year feeding study of Captan indicated duodenal tumors in mice after repeated administration of high dose levels. The NOEL (No Observed Effect Level) was 400 ppm. No evidence of carcinogenicity was observed in long-term studies with rats. Information on the mechanism of these tumors establishes a threshold for the duodenal tumors, and indicates that this tumor type is not relevant for human risk assessment at likely exposure levels.
Mutagenicity : Captan : Not mutagenic (in-vivo)
Reproductive toxicity : Captan : Not teratogenic in animal experiments

12. ECOLOGICAL INFORMATION


Ecological effects information : The data below are for Captan : Very toxic to aquatic organisms. (fish and algae) in laboratory experiments .
Low toxicity in actual use, due to its hydrolytic instability .
LD50 Birds [mg/kg] : > 2000
Persistence and degradability : The product is readily biodegradable .
Mobility : Product does not leach to ground water.
Bioaccumulative potential : Does not bioaccumulate in aquatic organisms .

13. DISPOSAL CONSIDERATIONS



Disposal : Avoid release to the environment.
Dispose in a safe manner in accordance with local/national regulations.

14. TRANSPORT INFORMATION

- **UN No.** : 3082
- **Proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (500 g/l Captan)
- **Packing group** : III
- **Class** : 9
- **H.I. nr :** : 90
- **ADR/RID**
- **ADR class** : 9
- **ADR Packing group** : III
- **IMDG-Marine pollution** : No.

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15. REGULATORY INFORMATION

EU Classification	: This product is provisionally labelled by the supplier in accordance with the suppliers understanding of the EU regulations :
Symbol(s)	<div style="display: flex; justify-content: space-around; align-items: center;">   </div>
R Phrase(s)	: Xn: Harmful. N: Dangerous for the environment. : R36 - Irritating to eyes. R40 - Limited evidence of a carcinogenic effect. R43 - May cause sensitization by skin contact. R50 - Very toxic to aquatic organisms.
S Phrase(s)	: S02 - Keep out of the reach of children. S13 - Keep away from food, drink and animal feedingstuffs. S20/21 - When using, do not eat, drink or smoke. S23 - Do not breathe gas/fumes/vapour/spray. S24/25 - Avoid contact with skin and eyes. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection. S35 - This material and its container must be disposed of in a safe way. S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

Recommended uses and restrictions	: None.
<i>Text of R-phrases in heading 2</i>	: <i>R23 - Toxic by inhalation.</i> <i>R36/38 - Irritating to eyes and skin.</i> <i>R40 - Limited evidence of a carcinogenic effect.</i> <i>R41 - Risk of serious damage to eyes.</i> <i>R43 - May cause sensitization by skin contact.</i> <i>R50 - Very toxic to aquatic organisms.</i>
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