MATERIAL SAFETY DATE SHEET

CARBENDAZIM 50% SC

1. PRODUCT IDENTIFICATION

Product	CARBENDAZIM 50% SC
Ingredient	carbendazim
Chemical Name	Methyl benzimidazol-2-ylcarbamate
Chemical Formula	$C_9H_9N_3O_2$
CAS Number	10605-21-7
Manufacturer	Shanghai Tenglong Agrochem Co., Ltd.
Address	Yangpu building 24B, No.2005, Huangxing Road, Yangpu Shanghai
Tel	86-21 5506 3225
Fax	86-21-5506 3699

2. COMPOSITION (INFORMATION ON INGREDIENTS)

COMPONENT	CAS NUMBER	Proportion
Carbendazim	010605-21-7	500g/l
Propylene glycol	57-55-6	40g/l
naphthalene sulfonate sodium	26545-58-4	50g/l
Dimethyl silicone oil	9006-65-9	2.5g/l
Sodium benzoate	532-32-1	1g/l
Xanthan gum	11138-66-2	1g/l
Water	7732-18-5	Up to 1L

3. HAZARDS IDENTIFICATION

Ingestion	Acute oral LD_{50}(rats) : >15 000 mg/kg; Acute dermal LD_{50} (rats): >5000 mg/kg.
Eye contact	Non irritating
Skin contact	Non irritating
Skin absorption	Repeated application of 2000 mg/kg of carbendazim as a 50% aqueous paste to the skin of New Zealand albino rabbits over ten days have produced necrosis of epidermis and polymorphonuclear cell infiltration of the dermis in five out of six exposed rabbits.
Inhalation	Rats LC50 (4 hrs): ＞5.0 mg/L.

4. FIRST AID MEASURES

Skin	Remove contaminated clothing and wash affected areas or skin with soap and water. Seek medical advice if irritation develops.
Eyes	Hold the eyes and flush immediately with plenty of water for at least 15

minutes. Seek medical advice if irritation develops.

Ingestion	If swallowed, DO NOT induce vomitting. Wash out mouth with water. Obtain medical attention immediately.
Inhalation	Give artificial respiration or oxygen if breathing is shallow or stopped. Get medical attention immediately

5. FIRE FIGHTING MEASURES

Flash Point: none flammable

Auto Ignition Temperature: none flammable

Extinguishing Media: Foam, dry chemical or carbon dioxide

Special Fire Fighting Procedures: None

Unusual Fire or Explosion Hazards: If involved in a fire, may emit oxides of carbon and nitrogen. In confined spaces wear self-contained breathing apparatus. Contain fire-fighting water by bunding area with sand or earth to prevent it entering any bodies of water. Dipose of fire control water or other extinguishing agent and spillage later.

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled:

Contain spill and adsorb with sand, earth, clay, or other proprietary absorbent (vermiculite). Collect in sealed open-top containers for disposal. Deal with all spillages immediately. Prevent spilled material from entering drains or watercourses. If contamination of drains, streams or watercourses is unavoidable, warn the local authority.

Disposal Method:

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

For refillable containers: empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

7. HANDLING AND STORAGE

Handling:

• Avoid contact with eyes, skin, or clothing.

• Wash thoroughly with soap and water after handling.

• Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or public waters. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority.

Storage:

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory Protection Do not inhale spray mist.

Protective Clothing	Wear PVC/rubber apron or cotton overalls buttoned to the neck and wrist, elbow-length PVC gloves.
Eye Protection	Eye contact with the material should be avoided through the use of chemical safety glasses, goggles or a face shield, selected in regard to exposure potential.
Other Protection	An adequate supply of clean potable water should be available to allow thorough flushing of skin and eyes in event of contact with these compounds. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Viscous white suspension with negligible odour
Specific Gravity	1.45
Melting Point	0℃
Boiling Point	100℃
Density	1.14
Vapour Pressure	2.37kPa at 20℃ (water vapour pressure).
Solubility in water	Fully dispersed in water

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10. STABILITY AND REACTIVITY

Chemical Stability: Decomposes at 180° with heat evolution. No changes after 2weeks in contact with copper, zinc or sunlight. There was about 3% assay loss after 2 weeks in contact with iron at 50°C.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibility with Other Materials: strong acids, strong bases, strong oxidising agents. Hazardous Decomposition Products: If involved in a fire, may emit oxides of carbon and nitrogen.

Hazardous Polymerization: Does not occur

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals. Data obtained on similar products and on components are summarized below.

Toxicity:

-Acute oral: LD50 for rats: ＞5000 mg/kg

-Acute dermal: LD50 for rats: >2000 mg/kg

-Inhalation: LC50 (4h) for rats: >4.28 mg/L

-Skin and eyes: No irritating to skin and eyes (rabbits)

-Sensitization: Not sensitizer

12. ECOLOGICAL INFORMATION

96-hr LD_{50} Honeybee: 50μg/bee
Acute Oral LD_{50} Quail: >5000 mg/kg, Practically Nontoxic
Acute Oral LD_{50} Bobwhite Quail: 1,260 mg/kg, Slightly Toxic
5-day Dietary LC_{50} Mallard Duck: >5,620 ppm, Practically Nontoxic
5-day Dietary LC_{50} Bobwhite Quail: >5,620 ppm, Practically Nontoxic
48-hr LC_{50} *Daphnia magna*: 2.9 mg/L
96-hr LC_{50} Carp: 1.61 mg/l, Moderately Toxic
96-hr LC_{50} Rainbow Trout: 0.83 mg/l, Highly Toxic
72-hr EC50 algae (*selenastrum capricornutum*): 1.3 mg/L
72-hr EC50 algae (*scenedesmus subsspicatus*): 419 mg/L

13. DISPOSAL CONSIDERATIONS

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

For refillable containers: empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

14. TRANSPORT INFORMATION

Considered non-hazardous for transport. No special transport conditions are necessary unless required by other regulations

IMCO Class 9 PG Ⅲ
UN No. 3082
ICAO/IATA Class: 9

15. REGULATORY INFORMATION

Toxicity class: WHO (a.i.) U
EC classification: R68

16. OTHER INFORMATION

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 how the product will be 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 this company. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.