Material Safety Date Sheet (MSDS)
Sword 202 EC

IDENTIFICATION OF THE SUPPLIER:

AGRO CHEMICALS INDUSTRIES LTD
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PRODUCT IDENTIFICATION:

Common Name: Chlorpyrifos 20% w/v + Cypermethrin 2% w/v
Trade Name: Sword 202 EC
Type of formulation : Emulsifiable Concentrate (EC)
Chemical Name:
Chlorpyrifos: O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate
Cypermethrin: cyano(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
Chemical Formula:
Chlorpyrifos: $C_9H_{11}Cl_3NO_3PS$
Cypermethrin: $C_{22}H_{19}Cl_2NO_3$
Molecular Weight:
Chlorpyrifos: 350.6
Cypermethrin: 416.3

PRODUCT COMPOSITION:

Active Ingredient:	***% w/v***	***CAS #***
Chlorpyrifos	20%	[2921-88-2]
Cypermethrin	2%	[52315-07-8]
Inert ingredient:		
Emulsifier	8%	--
Solvent	Up to 100%	--

HAZARDS IDENTIFICATION:

Flammable. Harmful if swallowed. Risk of serious damage to eyes.
Irritating to skin. Very toxic to aquatic organisms. Toxic to bees.

FIRST-AID MEAUSRES:

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Ingestion

Do not induce vomiting. Call a physician and/or transport to emergency facility immediately. The decision of whether to induce vomiting or not should be made by an attending physician

Eye Contact

Immediate and continuous irrigation with flowing water for at least 15 minutes is imperative. Prompt medical consultation is essential.

Skin Contact

Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Wash contaminated clothing before reuse.

Inhalation

Remove to fresh air. Consult a physician.

Note to Physician

This material contains both a cholinesterase inhibitor and a solvent.
Signs of poisoning may include dizziness, nausea, vomiting, intestinal spasms, diarrhea, contracted pupils and difficulty in breathing.
Atropine by intravenous administration is the antidote of choice.
Oximes may or may not be therapeutic but it is recommended that they should not be used in place of atropine.
If lavage is performed, suggest endotracheal and/or oesophageal control.
Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Supportive care. Treatment based on judgement of physician in response to symptoms of patient.

FIRE-FIGHING MEASURES: -

Extinguishing Media

Water fog or fine spray. Carbon dioxide. Dry chemical. Foam.

Hazardous Combustion Products

Hydrogen chloride, Sulphur oxides, Nitrogen oxides, Hydrogen cyanide, dependant on the intensity of the fire.

Protection of Firefighters

Wear protective clothing and use self-contained breathing apparatus.

Additional Information
Violent eruption of containers may occur under fire conditions. Keep containers cool by spraying with water. Contain runoff to prevent entry into water or drainage systems.

ACCIDENTAL RELEASE:

Personal Precautions
Wear appropriate safety clothing and eye/face protection
Environmental Precautions
Do not wash into sewers or into any body of water. Advise water authority if spillage has entered water course or drainage system
Methods of Cleaning Up
Soak up with sand or other non-combustible absorbent material and place into containers for disposal. For large spills, barricade area and consult manufacturer. If further assistance is required, telephone the emergency contact number.
Additional Information
Eliminate all ignition sources.

HANDLING AND STORAGE:

Handling
Use good personal hygiene. Do not consume or store food in the work area. Wash hands and exposed skin before eating, drinking or smoking and after work. Avoid breathing vapours. Avoid eye contact.
Storage
Product should be stored in compliance with local regulations. Store in a cool, dry, well-ventilated place in the original container. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilisers. Keep out of reach of children.

PERSONAL PROTECTION/SAFTETY:

Exposure Guidelines
None established for the preparation.
Chlorpyrifos: ACGIH Threshold Limit Value (TLV) is 0.2 mg/m3 TWA-8 hours (skin). Supplier recommendation for solvent is 100 ppm
Engineering Controls
Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Respiratory Protection

When airborne exposure guidelines and/or comfort levels may be exceeded, use an approved air-purifying respirator.

For emergency conditions, use an approved positive-pressure selfcontained breathing apparatus.

Hand/Skin Protection

For brief contact, no precautions other than clean body-covering clothing and chemical resistant gloves should be needed. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

For emergency conditions: Use protective clothing impervious to this material. Selection of specific items will depend on operation.

Eye/Face Protection

Use chemical goggles. If vapour exposure causes eye discomfort, use a full-face supplied-air respirator

PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	: clear liquid
Colour	: pale yellow
Density	: 0.97 g/ml± 0.05
Water solubility	: emulsifiable
Flash point	: 42 ^{o}C

STABILITY AND REACTIVITY:

Chemical Stability

Is stable under normal storage conditions.

Conditions to Avoid

Avoid high temperatures (at or near flash point), open flame, sparks and direct sunlight. Contains petroleum derivative solvent - will burn.

Materials to Avoid

Strong basic, acidic or oxidising materials.

Hazardous Decomposition Products

None under normal conditions of storage and use.

Additional Information

Chlorpyrifos: Product undergoes exothermic decomposition which can lead to high temperatures and violent decomposition if heat developed is not removed.

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TOXICOLOGICAL INFORMATION:

Acute toxicity

Chlorpyrifos: Acute oral LD50 for rats 135-163 mg/ kg

Cypermethrin: Acute oral LD50 for rats 250-4150 mg/ kg

Ingestion

Single dose oral toxicity is considered to be moderate.

The estimated oral LD50 for rats is >200 mg/kg, < 2000 mg/kg.

Skin Contact

The estimated dermal LD50 for rats is >2000mg/kg.

A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

Short single exposure may cause skin irritation.

Sensitisation

Non-sensitising to guinea pig skin.

Eye Contact

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.

Inhalation

No adverse effects anticipated by this route of exposure, but excessive exposure should be avoided.

Other Information

Excessive exposure may cause organophosphate type cholinesterase inhibition.

ECOLOGICAL INFORMATION:

Persistence and Degradability

Chlorpyrifos:

Does not leach in soils and is therefore unlikely to contaminate ground water. Half-life in soils is dependent on soil type and conditions and is approximately 10-56 days.

Cypermethrin:

In soil, the half-life is approximately 14-28 days. Does not leach in soils and is therefore unlikely to contaminate ground water. There is no carry-over to follow-on crops.

Aquatic Toxicity

Acute LC50 for rainbow trout (Onchorynchus mykiss) is 0.0075 mg/L.

Acute LC50 for daphnids is reported to be 0.00034mg/L.

Algal toxicity EC50 for green algae is 1.1mg/L.

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Avian Toxicity

Chlorpyrifos:

Material is moderately toxic to birds on an acute basis (50 mg/kg < LD50 <500mg/kg).

Cypermethrin:

Material is practically non-toxic to birds on an acute basis (LD50 >2000mg/kg).

Other Information

LD50 for earthworms is 120mg/kg.

Chlorpyrifos: Toxic to bees.

Cypermethrin: Toxic to bees.

DISPOSAL CONSIDERATIONS:

Very toxic to aquatic organisms. Do not contaminate ponds, waterways or ditches with chemical or used container. Wash out thoroughly. Container and washings must be disposed of safely and in accordance with applicable regulations. The preferred options are to send to licensed reclaimer or to permitted incinerators. Do not re-use container for any purpose.

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