

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825**SECTION 1 - PRODUCT & COMPANY IDENTIFICATION**

Substance: Chlorothalonil.
Product Name: **MONIKER 720 SC**
Product Use: Fungicide
Creation Date: December 2007
Revision Date: September 2017

24 Hr Emergency Number: 082 771 2712**In case of poisoning:**

Poison Information Centre: 082 446 8946

Tygerberg Hospital: (021) 931 6129

Poison Emergency Enquiries (021) 689 5227

In case of Spillage:

HAZMAT: 0800 147 112

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: Chlorothalonil
Chemical Name: Tetrachloroisophthalonitrile (**IUPAC**)
CAS No.: 1897-45-6
Chemical family: chloronitrile
Chemical formula: C₈Cl₄N₂
Molecular weight: 265.92
Use: A suspension concentrate contact fungicide for the preventive control of the fungal diseases on certain crops.

Formulation: Chlorothalonil 720 g/l
 Suspension Concentrate

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
Chlorothalonil	harmful, environmental hazard, Carc. Cat 3	> 72 %
Glycol	harmful	> 12 %

Symbols: Xi, N
Risk-phrase(s): R20/R22, R36/37/38, R40, R43, R50

SECTION 3 - HAZARD IDENTIFICATION**Likely routes of exposure:** Slightly toxic to mammals, but it can cause severe eye and skin irritation and skin sensitization.**Skin:** Severe irritant to skin. Skin contact with Chlorothalonil may result in dermatitis or light sensitivity.**Eye contact:** Severe eye irritant.**Ingestion:** May cause irritation of the gastrointestinal tract.**Inhalation:** Inhalation of dust or spray mist may cause irritation.**Environment:** Highly toxic to fish and aquatic organisms.**SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS**

Very high doses may cause a loss of muscle coordination, rapid breathing, nose bleeding, vomiting, hyperactivity, and death. Dermatitis, vaginal bleeding, bright yellow and/or bloody urine, and kidney tumours may also occur.

Swallowed: Do not induce vomiting. If totally conscious, give large quantities of milk or water to drink. Seek medical advice.

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Eyes: Irrigate with copious amounts of water for 15 minutes. Eyelids may have to be held open to ensure that the entire surface of the eye and lids are rinsed. Refer for medical advice if irritation persists.

Skin: Remove contaminated clothing while washing with copious quantities of water and soap for 15 minutes. If skin is irritated, refer for medical advice.

Inhaled: Remove person from contaminated atmosphere to fresh air. If shortness of breath or asphyxia has occurred give oxygen (if available) and commence resuscitation if necessary. Seek urgent medical advice.

Advice to the physician

Treat symptomatically.

Workers exposed to **Chlorothalonil** during production and use has developed eye irritation and severe skin irritation.

Chlorothalonil has caused allergic reactions in some workers.

For temporary allergic reactions, treat with antihistamines or steroid creams and/or systemic steroids.

SECTION 5 - FIRE-FIGHTING MEASURES

Fire and explosion hazard:

Flash point: None – water based.

This material is not flammable.

Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal.

Fire fighting:

Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways. Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Personal protective equipment:

Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8. Keep bystanders away from scene of accident. Wear full protective clothing. Douse spill area with sodium hypochlorite solution (bleach) and absorb using soil or sand. Sweep up

Environmental precautions:

EXTREMELY TOXIC TO FISH. Do not contaminate dams, ponds, waterways or drains with product or used container. Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs. Considered as Marine Pollutant.

Occupational spill:

Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals. For spills: Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind. To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations. Open burning or dumping of this material is prohibited. Do not get water inside containers.

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SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

Handling:

Harmful if swallowed. Irritating to the eyes, respiratory system and skin. Avoid contact with eyes and skin, and inhalation of spray and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the fungicide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Store away from incompatible substances. Local regulations should be complied with.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

No occupational exposure limits have been established for Chlorothalonil. This does not mean that this substance is not harmful. Safe work practices should always be followed. It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Respirator:

Wear a respirator fitted with combined dust and vapour cartridge (MSHA-NIOSH).

Clothing:

When using, do not eat, drink or smoke. Wear suitable clothing including PVC or rubber gloves, safety boots and goggles. Wear full coverall or full-length trousers with long sleeved shirt buttoned to the wrist and washable hat. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. Remove contaminated clothing and wash before re-wearing.

Gloves:

Wear PVC or rubber gloves.

Eye protection:

Wear dust-proof goggles and face shield when working with powders or dust, unless full-face piece respiratory protection is worn.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White to cream homogeneous flowable liquid suspension.

Odour: Weak chemical odour.

Relative density: 1,21 g/ml @ 20°C

Solubility in water: Forms a suspension with water.

Flash point: Does not flash. None.

Oxidizing properties: None.

SECTION 10 - STABILITY AND REACTIVITY

Stability:

Stable under normal temperatures and storage conditions.

Storage stability:

Stable for two years if stored in closed sealed containers in cool storage conditions.

Incompatibility:

Unstable under highly alkaline conditions.

Hazardous decomposition products:

Heating Chlorothalonil may release toxic Cyanide.

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SECTION 11 - TOXICOLOGICAL INFORMATION**Acute oral LD₅₀:** (calculated) > 6944 mg/kg.

(Technical: > 5000 mg/kg for rats)

Acute dermal LD₅₀: (calculated) < 6944 mg/kg.

(Technical: > 5000 mg/kg for rabbits)

Inhalation: Harmful, may cause irritation of respiratory tract.(Technical: LC₅₀ (4 hours): > 0,1 mg/l air)**Acute skin irritation:** Mild skin irritant.**Acute eye irritation:** Severe eye irritant.**Skin sensitization:** Cause dermatitis, mild sensitizer.**Reproductive effects:**

Studies suggest that chlorothalonil will not affect human reproduction at expected exposure levels.

Teratogenic effects:

Chlorothalonil is not expected to produce birth defects in humans.

Mutagenic effects:

Mutagenicity studies on various animals, bacteria, and plants indicate that chlorothalonil does not cause any genetic changes. The compound is not expected to pose mutagenic risks to humans.

Carcinogenic effects:

Based on evidence from animal studies, chlorothalonil's carcinogenic potential is unclear. Male and female rats fed chlorothalonil daily over a lifetime developed carcinogenic and benign kidney tumors at the higher doses. In another study, where mice were fed high daily doses of chlorothalonil for 2 years, females developed tumors in the fore-stomach area (attributed to irritation by the compound) and males developed carcinogenic and benign kidney tumors. Carcinogenicity: Cat 3.

ADI: 0,03 mg/kg body weight.**SECTION 12 - ECOLOGICAL INFORMATION****Degradability:**

Chlorothalonil is moderately persistent. In aerobic soils, the half-life is from 1 to 3 months. Increased soil moisture or temperature increases Chlorothalonil degradation. It is not degraded by sunlight on the soil surface Chlorothalonil has high binding and low mobility in silty loam and silty clay loam soils, and has low binding and moderate mobility in sand. Chlorothalonil is adsorbed to the soil. Chlorothalonil is almost insoluble in water. The potential for leaching is generally low. The mobility of Chlorothalonil in soil is low in most soils, but in sandy soils, it is moderately mobile. Chlorothalonil has been found in groundwater in two areas, which were highly susceptible to groundwater contamination. Chlorothalonil does not evaporate easily.

ECOTOXICOLOGY:**Birds: Practically non-toxic to birds.**LC₅₀: Mallard duck: > 4640 mg/kgDietary LC₅₀ (8days): Bobwhite quail: > 10 000 mg/kg**Fish: Highly toxic to fish and aquatic organisms.**LC₅₀ (96 hours): Rainbow trout: 47 µg/l

Bluegill sunfish: 59 µg/l

Channel catfish: 44 µg/l

Algae: EC₅₀: *Selenastrum capricornutum* 210 µg/l**Daphnia:** LC₅₀ (48 hours): 70 µg/l**Bees: Not toxic.** LD₅₀ (contact): > 101 µg/beeLD₅₀ (oral): > 63 µg/bee**Earthworms:** LC₅₀ (14 days): > 1000 mg/kg**SECTION 13 - DISPOSAL CONSIDERATION****Pesticide disposal:**

Open dumping or burning of this pesticide is prohibited Waste resulting from the use of this product that cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Toxic to fish, aquatic invertebrates, and marine organisms. Comply with local legislation applying to waste disposal.

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Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner. Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils. Comply with local legislation applying to waste disposal.

SECTION 14 - TRANSPORT INFORMATION**UN NUMBER:** 3082**Road Transport ADR/IRD:**

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, Liquid, N.O.S. (chlorothalonil 720 g/l)

Maritime Transport IMDG/IMO:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, Liquid, N.O.S. (chlorothalonil 720 g/l)

MARINE POLLUTANT.**Air Transport AIR/IATA:**

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (Chlorothalonil 720 g/l)

SECTION 15 - REGULATORY INFORMATION**Symbol:** Xn, Xi; Carc. Cat 3**Indication:** Environmentally dangerous substance, Irritant.**Risk phrases:****R 22** Harmful if swallowed.**R 36/37/38** Irritating to eyes, respiratory system and skin.**R 40** limited evidence of a carcinogenic effect.**R 43** May cause sensitization by skin contact.**R 50** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**Safety phrases:****S 1/2** Keep out of reach children.**S 13** Keep away from food, drink and animal feedstuffs**S 23** Do not breathe vapour/spray**S 24/25** Avoid contact with skin and eyes.**S 36/37/39** Wear gloves and eye/face protection.**S 61** Avoid release to the environment. Refer to special instructions/safety data sheets.**SECTION 16 - OTHER INFORMATION****Packaging and Labelling:**

Packed in 1, 5, 10, 20 and 25 l HDPE plastic containers and labelled according to South African regulations and guidelines.

Disclaimer:

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.