



SHANGHAI MINGDOU AGROCHEMICAL CO., LTD

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## MATERIAL SAFETY DATA SHEET OF ACETOCHLOR 95% TC

### 1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

**Supplier:** SHANGHAI MINGDOU AGROCHEMICAL CO., LTD

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**Product name:** Acetochlor 95% TC

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Formulation Type:** Technical material

**Active Ingredients:** Acetochlor

**Chemical Abstracts name:** 2-chloro-*N*-(ethoxymethyl)-*N*-(2-ethyl-6-methylphenyl)acetamide

**IUPAC name:** 2-chloro-*N*-ethoxymethyl-6'-ethylacet-*o*-toluidide

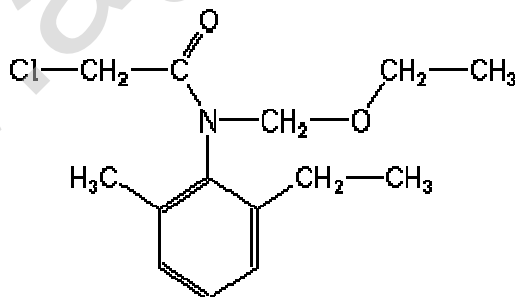
**Chemical Family:** Chloroacetanilide

**CAS NO.** 34256-82-1

**Molecular Formula:** C<sub>14</sub>H<sub>20</sub>ClNO<sub>2</sub>

**Molecular Weight:** 269.8

**Structural Formula:**



**Other ingredients determined not to be hazardous**

INGREDIENT	CAS NO	PROPORTION
acetochlor	34256-82-1	≥95%
other	Not available	≤5%



### 3. HAZARDS IDENTIFICATION

**Emergency overview:** Cause irritation to the skin and eyes. May cause skin sensitisation by contact. Aspiration into lungs may cause chemical pneumonitis. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Routes of entry:** Skin contact, ingestion, and inhalation.

**Health hazards:** This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

**Eyes:** May cause slight eye irritation.

**Skin:** Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption in rats is >2000 mg/kg. Has caused allergic skin reactions when tested in guinea pigs. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

**Inhalation:** At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material or mist may cause respiratory irritation and other effects.

**Physical hazards:** Not flammable.

**Environmental hazards:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 4. FIRST AID MEASURES

**General:** Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

**Eyes:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Skin:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items, which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

**Ingestion:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center



or doctor. Never give anything by mouth to an unconscious person.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Note to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. FIRE FIGHTING MEASURES

**Flash point:** 160°C.

**Flammable limits:** Not determined.

**Autoignition temperature:** Not determined.

**Hazardous combustion products:** When heated to decomposition, acetochlor emits very toxic fumes of chloride and oxides of nitrogen.

**Extinguishing media:** Foam, carbon dioxide, or dry chemical.

**Fire-fighting instructions:** 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.

**Protective equipment for firefighters:** A self-contained breathing apparatus with full-face piece and full protective clothing must be worn in fire conditions.

## 6. ACCIDENT RELEASE MEASURES

**Personal precautions:** Avoid contact with skin and eyes. Do not breathe in fumes. For personal protection see Section 8.

**Environmental precautions:** Acetochlor is toxic to fish and very toxic to algae. Is an environmentally hazardous substance. Do not allow entering drains or watercourses.

**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.

## 7. HANDLING AND STORAGE

**Handling:** Harmful if swallowed. Avoid inhalation and contact with eyes and skin. Use with adequate ventilation. Do not handle broken packages without protective equipment. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Seek medical advice. 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. Worker should shower at the end of each work day. Launder all clothing before it is re-used again.

**Storage:** Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs and water supplies. Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

**Storage stability:** Stable for a period of 2 years under normal warehouse conditions.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

**Engineering controls:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

**Eye/face protection:** Use safety glasses or face-shield.

**Skin protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face-shield, gloves, boots, apron or full-body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

**Respiratory protection:** An approved full-face respirator suitable for protection from spray or mists of pesticides is required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Wind red to yellow viscous liquid

**Vapor pressure:** 10.6 mPa (20°C).



**Boiling point:** 172°C.

**Degradation point:** 238°C.

**Flash point:** 160°C.

**S.g./density:** 1.12 g/cm<sup>3</sup> (20°C).

**Partition coefficient:** K<sub>ow</sub> logP=4.14.

**Solubility:** In water 223 mg/l (25 °C). Soluble in diethyl ether, acetone, benzene, chloroform, ethanol, ethyl acetate, and toluene.

## 10. STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal storage conditions.

**Hazardous decomposition:** Although acetochlor is stable under normal temperatures and pressures, thermal decomposition products may include toxic oxides of nitrogen and carbon and toxic and corrosive fumes of chlorides.

**Incompatible materials:** Hydrolysed by strong acids and bases.

**Hazardous reactions:** Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity:

Oral: LD<sub>50</sub> >2000 mg/kg (rat)

Dermal: LD<sub>50</sub> >2000 mg/kg (rat)

Inhalation: LC<sub>50</sub> >3.0 mg/l (rat)

### Irritant properties:

Skin: Skin irritant.

Eye: Slight eye irritant.

### Allergenic and sensitizing effects:

Contact sensitization reactions observed in guinea pigs.

### Chronic toxicity/Carcinogenicity:

In various studies carcinogenicity effects were noted. Based on data, the US EPA has classified acetochlor as a “probable human carcinogen”.

In a 1-year feeding study, with dogs fed dosages of 0, 4, 12, and 40 mg/kg/day, the NOEL was 12 mg/kg/day based on decreased body weight gains in males, decreased terminal body weight in females, testicular atrophy with accompanying decreases in absolute and relative testicular weight, increase in relative liver weights in males and females, and clinical chemistry changes at 40 mg/kg/day, the highest dose tested. In a 1-year feeding study, with dogs fed dosages of 0, 2, 10, and 50 mg/kg/day, the NOEL was



2 mg/kg/day based on increased salivation, ornithine carbamyl transferase, and triglyceride values accompanied by decreased blood glucose levels and liver glycogen levels at 10 mg/kg/day.

**Genetic effects/Mutagenicity:**

Acetochlor was weakly positive in the gene mutation assay with and without activation in the mouse lymphoma assay. However, negative in a DNA damage repair assay, Salmonella assay and chromosomal aberration studies. Positive evidence of mutagenicity was found in various studies at the mid- and high-dose levels.

**Reproductive and Developmental effects:**

Acetochlor did not induce either maternal or developmental toxicity in rabbits up to 300 mg/kg/day, the highest dose tested. In a developmental study submitted by Monsanto, with rats fed dosages of 0, 50, 200, and 400 mg/kg/day, acetochlor did not induce developmental toxicity.

**12. ECOLOGICAL INFORMATION**

The following information is for the active ingredient, acetochlor.

**Ecotoxicity:**

Birds	Acute oral LD <sub>50</sub> : 1260 mg/kg (bobwhite quail). Dietary LC <sub>50</sub> (5 days): >5000 ppm (quail and mallard ducks).
Fish	LC <sub>50</sub> (96 h): 0.36 mg/l (rainbow trout), 1.5 mg/l (bluegill sunfish). Chronic NOEC (21 days): 8.6 mg/l ( <i>Oncorhynchus mykiss</i> ).
Daphnia	EC <sub>50</sub> (48 h): 9 mg/l. Chronic NOEC (21 days): 0.022 mg/l.
Algae	EC <sub>50</sub> (72 h): 0.00027 mg/l. Chronic NOEC (96 h): 0.00059 mg/l.
Bees	LD <sub>50</sub> (oral): >0.1 LD <sub>50</sub> (contact): >0.2 mg/bee.
Earthworm:	LC <sub>50</sub> (14 days): 211 mg/kg soil.

**Persistence and degradability:** Acetochlor persistence in a confined soil system appears to increase with coarser soil texture and increased application rate. The half-lives in aerobic soils for the 3, 4.5, 10.5, 41, and 50 ppm application rates were 8-12, 14, 110-245, 55, and 300 days, respectively. Under anaerobic conditions, acetochlor degrades with a half-life of 17 to 21 days with microbial degradation being the major pathway. However, with coarse soils such as sandy loam the half-life is 230 days.

**Bioaccumulative potential:** A study on the bioconcentration potential in fish was made available as the log P<sub>ow</sub> exceeds 3. The resulting BCF value of 20 indicates a low risk of bioconcentration in fish.



**Mobility in soil:** Acetochlor is found to be moderately mobile in soils with higher organic matter (3.4%) and very mobile in soils with lower organic matter content (0.7%). This herbicide leaches in the soil profile.

### 13. DISPOSAL CONSIDERATION

Do not contaminate ponds, waterways or ditches with chemical or used containers. Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product.

Dispose of in accordance with all local, state, and federal requirements. Remove all product residues from container and puncture or otherwise destroy empty container before disposal.

### 14. TRANSPORT INFORMATION

**UN Number:** 3082

**UN Proper shipping name:** Environmentally hazardous substances, liquid, n.o.s. (Acetochlor 750 g/l)

**Transport hazard class:** 9

**Packing group:** III

**Marine pollutant:** Yes

### 15. REGULATORY INFORMATION

Keep locked up out of reach of children and other, unauthorized persons. Keep away from food, drink and animal feeding stuffs.

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Do not get in eyes, on skin or on clothing. Do not breathe dust, vapor or spray mist.

In case of accident or if you feel unwell, seek medical advice immediately.

This material and its container must be disposed of in a safe way.

Do not contaminate any body of water.

### 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 the 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 the company.

END OF MSDS