



## MATERIAL SAFETY DATA SHEET

### Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO.,LTD

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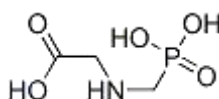
### 1. Chemical Product Identification

Product Name: Glyphosate 95% TC

Molecular Formula: C<sub>3</sub>H<sub>8</sub>NO<sub>5</sub>P

Molecular Weight: 169.07

Structural Formula:



Chemical Name: N-(phosphonomethyl) glycine (IUPAC)

Form: Crystals

Color: Colourless

CAS No.: 1071-83-6

### 2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Glyphosate	1071-83-6	95.0
Others ingredients	---	5.0

### 3. Hazards Identification

Emergency Overview: Health Hazard likely routes of exposure Skin contact and inhalation

Potential Health Hazards:

Eye contact: The product may cause pain, redness and tearing.

Skin contact: The product is only slightly toxic and only slightly irritating.



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Ingestion: The product only slightly toxic. The gastrointestinal discomfort with irritation in mouth, vomiting and diarrhea.

Inhalation: The product is slightly toxic by this route.

#### **4. First Aid Measures**

Ingestion: The product will cause gastrointestinal irritation. Immediately dilute by swallowing water and milk. Get medical attention.

Inhalation: Remove person from exposure area to fresh air. If not breathing difficulty, give artificial respiration, preferably mouth to mouth. Get medical attention.

Skin: Take off contaminated clothing. Wash skin with plenty of soap and water. Get medical attention if irritation persists.

Eyes: Hold eye open and rinse with plenty of water. If irritation continues, call a doctor.

Antidote: Give symptomatic and supportive treatment as per symptoms and cause.

#### **5. Fire-Fighting Measures**

Extinguishing media: Use dry chemicals. Foam, CO<sub>2</sub> or dry chemical. Soft stream of water for only if needed.

Special hazards: The essential breakdown products are carbon monoxide, carbon dioxide, phosphorus pentoxide and nitrogen oxides.

Protective equipment: Isolate fire area. Evacuate down wind. Wear self-contained breathing apparatus pressure and protective gears. Do not smoking, gasses or vapor generated.

Hazardous combustion products: None.

#### **6. Accidental Release Measures**

Clean up spills immediately, observing precautions. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Vacuum or sweep up material and place in properly labeled disposal container. Dike to confine spill and absorb with non-combustible absorbent like clay, sand or soil. Vacuum shovel or pump waste in to drum and label contents for disposal. Large spills may be neutralized with bantonite or other absorbent clays. After removal, flush contaminated area thoroughly with water. Do not allow any material to run off in soil, drainage systems or bodies of water. Notify and consult with proper regulatory authorities

Protective equipment: Overalls, impervious gloves, rubber boots, face shield or goggles.



## 7. Handling and Storage

Storage: Store in a cool dry, well ventilated place in original container away from children and animals. Keep away from food, animal feed, other pesticides fertilizers and drinking water. Prevent eating, drinking tobacco use and cosmetic application in areas where there is a potential for exposure to the material.

Handling: Do not mix, store or apply this product or spray solutions of this product in galvanized or unlined steel(except stainless steel) containers or spray tanks. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.

## 8. Exposure Controls/personal protection

Personal Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Wear chemical resistant gloves. To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respirators

Wear a NIOSH-approved half face respirator equipped with an organic vapor/acid gas cartridge (specific for organic vapors, HCl, acid gas and SO<sub>2</sub>) with a dust/mist filter.

Engineering control

Use local exhaust ventilation at all processes locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

## 9. Physical and Chemical Properties

Appearance: Colourless crystals

Melting point: 189.5°C

Vapor pressure: 0.0131mPa (25 °C)

Boiling point: Decomposes before boiling

Density: 1.71g/ml

## 10. Stability and Reactivity

Stability: Stable under normal conditions

Conditions to avoid: Excessive heat and fire



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Incompatibilities: Avoid strong oxidizing agents

Hazardous decomposition products: Toxic fumes may be evolved if involved in a fire.

## 11. Toxicological Information

Acute oral LD<sub>50</sub> (rat) : > 2000 a.i.mg/kg

Dermal LD<sub>50</sub> (rabbit) : >2000 a.i.mg/kg

Inhalation LC<sub>50</sub> (rat) : >5.0 a.i.mg/l air

Skin irritation: Non-irritating to skin (rabbits).

Eye irritation: Slightly irritating to eyes (rabbits).

Sensitization (guinea pig): Not a skin sensitizer

Long-term toxicity: Studies of glyphosate lasting up to 2 years, have been conducted with rats, dogs, mice, and rabbits, and with few exceptions no effects were observed. For example, in a chronic feeding study with rats, no toxic effects were observed in rats given doses as high as 400 mg/kg/day. Also, no toxic effects were observed in a chronic feeding study with dogs fed up to 500 mg/kg/day, the highest dose tested.

Carcinogenicity: Rats given oral doses of up to 400 mg/kg/day did not show any signs of cancer, nor did dogs given oral doses of up to 500 mg/kg/day or mice fed glyphosate at doses of up to 4500 mg/kg/day. It appears that glyphosate is not carcinogenic.

Teratogenicity: In a teratology study with rabbits, no developmental toxicity was observed in the fetuses at the highest dose tested (350 mg/kg/day). Rats given doses up to 175 mg/kg/day on days 6 to 19 of pregnancy had offspring with no teratogenic effects, but other toxic effects were observed in both the mothers and the fetuses. No toxic effects to the fetuses occurred at 50 mg/kg/day. Glyphosate does not appear to be teratogenic.

Reproduction (2 generations): Laboratory studies show that glyphosate produces reproductive changes in test animals very rarely and then only at very high doses (over 150 mg/kg/day). It is unlikely that the compound would produce reproductive effects in humans.

Mutagenicity: Glyphosate mutagenicity and genotoxicity assays have been negative. These included the Ames test, other bacterial assays, and the Chinese Hamster Ovary (CHO) cell culture, rat bone marrow cell culture, and mouse dominant lethal assays. It appears that glyphosate is not mutagenic.

## 12. Ecological and Ecotoxicological Information

Effect on birds: Acute oral LD<sub>50</sub> for Bobwhite quail is >2250 a.i.mg/kg.



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Effect on fish: Acute LC50 (96 h) for Rainbow trout is 38.0 a.i.mg/l.

Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 40 a.i.mg/l.

Effects on algae: Acute EC50 (72 h) for Scenedesmus quadricauda is 4.4 a.i.mg/l.

Effects on bees: Contact acute (48h) LD50 is >100 a.i.µg/bee, Oral acute (48 h) LD50 is 100 a.i.µg/bee.

Effects on earthworms: Acute 14 day LC50 is >5600 a.i.mg/kg.

## 13. Disposal Considerations

Waste: Open dumping or burning of this pesticide or its packing is prohibited. Dispose of in accordance with applicable Federal, State, local laws and regulations.

Container: Plastic containers do not re-use the container. Dispose of empty containers in a sanitary landfill or incineration so as to avoid environmental or water pollution.

## 14. Transport Information

Not applicable

## 15. Regulatory Information

Not applicable

## 16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.