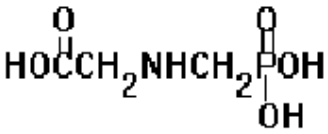
MATERIAL SAFETY DATA SHEET

Manufacturer/information service:
RAYFULL HOLDING CO., LTD.
ADD: 16 FLOOR 2A. DAZIRAN CITY LIGHT BLDG JINXIU RD WENZHOU ZHEJIANG CHINA.
Tel: +86-577-88905587 Fax: +86-577-88905567
Email: info@rayfull.com sales@rayfull.com

1. Chemical Product Identification

Product Name: Glyphosate
Molecular Formula: $C_3H_8NO_5P$
Molecular Weight: 169.1
Structural Formula:



Chemical Name: *N*-(phosphonomethyl)glycine
Form: solid
Color: White
Odor: Opaque
CAS No.: 1071-83-6

2. Composition / Information on Ingredients

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

3. Hazards Identification

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

4. First Aid Measures

Ingestion: Do not induce vomiting. Seek medical attention.
Skin contact: Remove contaminated clothing. Wash affected area with soap and water. Seek medical advice if irritation develops
Eye contact: Immediately flush with water for at least 15 minutes, holding eyelids open. Seek medical attention if irritation persists.
Inhalation: Unlikely under normal circumstances.

5. Fire-Fighting Measures

Extinguishing media: Non-flammable, non-combustible. In the event of a fire, use media suitable for the surrounding conditions.
Special hazards: May evolve toxic fumes in a fire
Protective equipment: Self-contained breathing apparatus, protective gloves and boots.

6. Accidental Release Measures

Containment: Contain spillage with sufficient absorbent material to absorb all liquid. Sweep into suitable container and store in a safe place until disposal.
Protective equipment: Overalls, impervious gloves, rubber boots, face shield or goggles.

7. Handling And Storage

Handling: Avoid contact with skin and eyes. When using, do not eat, drink or smoke. Wash thoroughly after using this product.
Storage: Store in the original container in a cool, dry, well-ventilated place away from food, drink and animal feeding stuffs. Keep container tightly closed, away from children.

8. Exposure Controls/Personal Protection

Precautions: Engineering controls should be provided which maintain airborne concentrations below the relevant guidelines.

9. Physical and Chemical Properties

Water Solubility: 12,000 mg/L @ 25℃
Solubility in Other Solvents: i.s. in common organics (e.g., acetone, ethanol, and xylene)
Melting Point: 200℃
Vapor Pressure: negligible
Partition Coefficient: -3.2218 - -2.7696
Adsorption Coefficient: 24,000 (estimated)

10. Stability and Reactivity

Stability: Stable under normal conditions
Conditions to avoid: Extreme temperatures
Materials to avoid: None specific
Hazardous decomposition products: Toxic fumes may be evolved if involved in a fire.

11. Toxicological Information

Acute toxic

LD50 oral rat 5600 mg/kg, mouse 11300mg/kg
LD50 dermal rabbit >5000mg/kg
LC50 inhalation rat (4h) >4.98mg/l air

Irritancy skin: non irritant (rabbit)
Irritancy eye: irritant (rabbit)
Skin sensitization: non sensitizer

Reproductive effects: 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.

Teratogenic effects: 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.

Mutagenic effects: 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.

Carcinogenic effects: 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.

Organ toxicity: Some microscopic liver and kidney changes, but no observable differences in function or toxic effects, have been seen after lifetime administration of glyphosate to test animals.

12. Ecological And Ecotoxicological Information

Quail acute oral LD50 >3581mg/kg
Mallard and quail LC50(8d): >4640mg/kg feed
Rainbow trout LC50: 86mg/l (96h)
Bluegill LC50: 120MG/L (96)
Bee LD50 (oral and contact): >100μg/bee
Mobility: Completely miscible with water
Persistence and degradability: Readily degradable
Ecotoxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

13. Disposal Considerations

Disposal should be carried out in accordance with local, state and national legislation.

14. Transport Information

Not classified as hazardous for transport.

15. Regulatory Information

Labelling information: R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Avoid release to the environment. Refer to special instructions

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.