

Glyphosate SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- * Product Name: Glyphosate
- * Catalog Number: E6833
- * CAS Number: 1071-83-6
- * IUPAC Name: Glycine, N -(phosphonomethyl)-

Relevant identified uses and uses advised against

- * Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- * Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- * Company: Selleck Chemicals
- * TollFree: +1 877 796-6397
- * Tel: +1 832 582-8158
- * Fax: +1 832 582-8590

Emergency telephone number

- * Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

- Serious eye damage: Category 1. H318
- Specific target organ toxicity (single exposure): Category 3. H336
- Carcinogenicity: Category 2. H351
- Reproductive toxicity: Category 2. H361
- Specific target organ toxicity (repeated exposure): Category 2. H373
- Acute aquatic toxicity: Category 1. H400
- Acute aquatic toxicity: Category 2. H401
- Acute aquatic toxicity: Category 3. H402
- Chronic aquatic toxicity: Category 1. H410
- Chronic aquatic toxicity: Category 2. H411
- Chronic aquatic toxicity: Category 3. H412

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)	H318: Causes serious eye damage H336: May cause drowsiness or dizziness H351: Suspected of causing cancer H361: Suspected of damaging fertility or the unborn child H373: May causes damage to organs through prolonged or repeated exposure H400: Very toxic to aquatic life H401: Toxic to aquatic life H402: Harmful to aquatic life H410: Very toxic to aquatic life with long lasting effects H411: Toxic to aquatic life with long lasting effects H412: Harmful to aquatic life with long lasting effects
Precautionary statement(s)	None.
Prevention	P203: Obtain, read and follow all safety instructions before use. P260: Do not breathe dust/fume/gas/mist/vapors/spray. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264+P265: Wash hands thoroughly after handling. Do not touch eyes. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Response	P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P354: IF IN EYES: Immediately rinse with water for several minutes. P317: Get emergency medical help. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P391: Collect spillage.
Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Glyphosate

CAS Number: 1071-83-6

PubChem CID: 3496

Molecular formula: C₃H₈NO₅P

Molecular weight: 169.07 g/mol

IUPAC name: 2-(phosphonomethylamino)acetic acid

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest.

Skin contact: Remove contaminated clothes. Rinse and then wash skin with water and soap.

Eye contact: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

/To fight fire use/ powder, alcohol-resistant foam, water spray, carbon dioxide.

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides (NO_x), oxides of phosphorus.

Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Sweep spilled substance into plastic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.

If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label.

After Applying a Pesticide, Indoors or Outdoors. To remove pesticide residues, use a bucket to rinse tools or equipment three times, including any containers or utensils that you used when mixing the pesticide. Then pour the rinsewater into the pesticide sprayer and reuse the solution by applying it according to the pesticide product label directions. After applying any pesticide wash your hands and any other parts of your body that may have come in contact with the pesticide..To prevent tracking pesticides inside, remove or rinse your boots or shoes before entering your home. Wash any clothes that have been exposed to a lot of pesticide separately from your regular wash.

Accidental Release Measures: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. **Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. **Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

Safe Disposal of Pesticides. The best way to dispose of small amounts of excess pesticides is to use them - apply them - according to the directions on the label. If you cannot use them, ask your neighbors whether they have a similar pest control problem and can use them. If all of the remaining pesticide cannot be properly used, check with your local solid waste management authority, environmental agency, or health department to find out whether your community has a household hazardous waste collection program or a similar program for getting rid of unwanted, leftover pesticides. These authorities can also inform you of any local requirements for pesticide waste disposal.

Safe Disposal of Pesticides. An empty pesticide container can be as hazardous as a full one because of residues left inside. Never reuse such a container. When empty, a pesticide container should be rinsed carefully three times and the rinsewater thoroughly drained back onto the sprayer or the container previously used to mix the pesticide. Use the rinsewater as a pesticide, following label directions. Replace the cap or closure securely. Dispose of the container according to label instructions. Do not puncture or burn a pressurized container like an aerosol - it could explode. Do not cut or puncture other empty pesticide containers made of metal or plastic to prevent someone from reusing them. Wrap the empty container and put it in the trash after you have rinsed it.

Waste treatment methods. Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Contaminated packaging: Dispose of as unused product.

Wear the items of protective clothing the label requires: for example, non-absorbent gloves (not leather or fabric), rubber footwear (not canvas or leather), a hat, goggles, or a dust-mist filter. If no specific clothing is listed, gloves, long-sleeved shirts and long pants, and closed shoes are recommended. You can buy protective clothing and equipment at hardware stores or building supply stores.

Outdoor Applications. Never apply pesticides outdoors on a windy day (winds higher than 10 mph). Position yourself so that a light breeze does not blow pesticide spray or dust into your face.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

Worker Protection Standard (WPS) Requirements. Any product whose labeling permits use in the production of an agricultural plant on any farm, forest, nursery or greenhouse must comply with the labeling requirements of: PR Notice 93-7, "Labeling Revisions Required by the Worker Protection Standard (WPS)," and PR Notice 93-11, "Supplemental Guidance for PR Notice 93-7." Unless specifically directed in the RED, all statements required by these two PR Notices must appear on product labeling exactly as instructed in the Notices. Labels /for glyphosate/ were required to/ be revised by April 21, 1994, for products distributed or sold by the primary registrant or supplementally registered distributors, and by October 23, 1995, for products distributed or sold by anyone.

For more Preventive Measures (Complete) data for GLYPHOSATE (9 total), please visit the HSDB record page.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

SMALL SPILLS AND LEAKAGE: If you spill this chemical, you should dampen the solid spill material with water, then transfer the dampened material to a suitable container. Use absorbent paper dampened with water to pick up any remaining material. Seal your contaminated clothing and the absorbent paper in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should protect this material from exposure to light, and store it under ambient temperatures. (NTP, 1992)

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Do NOT store or transport in containers made from galvanized steel or unlined steel. Store in an area without drain or sewer access.

Safe Storage of Pesticides. Always store pesticides in their original containers, complete with labels that list ingredients, directions for use, and first aid steps in case of accidental poisoning. Never store pesticides in cabinets with or near food, animal feed, or medical supplies. Do not store pesticides in places where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

7.2 Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Do NOT store or transport in containers made from galvanized steel or unlined steel. Store in an area without drain or sewer access.

Safe Storage of Pesticides. Always store pesticides in their original containers, complete with labels that list ingredients, directions for use, and first aid steps in case of accidental poisoning. Never store pesticides in cabinets with or near food, animal feed, or medical supplies. Do not store pesticides in places where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles and face shield.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Glyphosate is an odorless white powder. Decomposition begins at approximately 419 °F (darkens).
pH (1% solution in water) 2.5. (NTP, 1992)

b) Odor: Odorless

- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 446 °F (decomposes) (NTP, 1992)
- f) Initial boiling point and boiling range: No data available
- g) Flash point: No data available
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: 1.94e-07 mmHg at 113 °F (NTP, 1992)
- l) Vapor density: No data available
- m) Relative density: 1.74 (NTP, 1992) - Denser than water; will sink
- n) Water solubility: 5 to 10 mg/mL at 64 °F (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): -4.6
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 107 Å²

Complexity: 162

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

10.5 Incompatible materials

Incompatible materials: Strong oxidizing agents, metals, bases.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Phosphorus oxides (P₂O₅).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

Oral Acute Reference Dose (RfDoa)(mg/kg-day): 1

Oral Acute Reference Dose Reference: ATSDR Final

Skin corrosion/irritation:

No data available.

Serious eye damage/eye irritation:

Causes serious eye damage (H318).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

Suspected of causing cancer (H351).

Reproductive toxicity:

Suspected of damaging fertility or the unborn child (H361).

Specific target organ toxicity (single exposure):

H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

Glyphosate

Group 2A: Probably carcinogenic to humans

Volume 112: (2017) Some Organophosphate Insecticides and Herbicides

2017

2015

Signs and symptoms of exposure:

Cough.

Redness.

Redness. Pain.

Burning sensation in the throat and chest.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50; Species: /Oncorhynchus mykiss/ (Rainbow trout) weight 0.8 g; Conditions: static bioassay without aeration, 12 °C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L Concentration: 130 mg/L for 96 hr (95% confidence interval: 108-156 mg/L) /Technical material, 96.7%/

LC50; Species: Pimephales promelas (Fathead minnow) weight 0.6 g; Conditions: static bioassay without aeration, 20 °C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L; Concentration: 97 mg/L for 96 hr (95% confidence interval: 79-120 mg/L) /Technical material, 96.7%/

LC50; Species: Ictalurus punctatus (Channel catfish) weight 2.2 g; Conditions: static bioassay without aeration, 22 °C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L; Concentration: 130 mg/L for 96 hr (95% confidence interval: 108-156 mg/L) /Technical material, 96.7%/

LC50; Species: Lepomis macrochirus (Bluegill) weight 0.9 g; Conditions: static bioassay without aeration, 22 °C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L; Concentration: 135 mg/L for 96 hr (95% confidence interval 113-162 mg/L) /Technical material, 96.7%/

For more Ecotoxicity Values (Complete) data for GLYPHOSATE (50 total), please visit the HSDB record page.

/BIRDS and MAMMALS/ Male marsupials (Sminthopsis macroura) showed significant body weight loss after exposure to feed contaminated with concentrations of up to 50

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): -4.6

Low potential for bioaccumulation (Log P < 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

DOT label: Class 9

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: Yes (classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Not available in public databases.

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Environmental hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Carcinogenicity; Nephrotoxicity and Other Toxicity to the Urinary System; Other Toxicological Hazard Traits Authoritative List - CA MCLs; CWA 303(d); IARC Carcinogens - 2A; Prop 65 Rep
- EFSA Legal Basis: Regulation (EC) No 178/2002 (amended)

- Status Regulation (EC): 01/99/EC, 2010/77/EU, Reg. (EU) 2015/1885, Reg. (EU) 2016/1056, Reg. (EU) 2016/1313, Reg. (EU) 2017/2324, Reg. (EU) 2019/724, Reg. (EU) 2022/2364, Reg. (EU) 2023/2660, Reg. (EU) No 540/2011
- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)
- Federal Drinking Water Standards: Maximum contaminant levels (MCL) for synthetic organic contaminants apply to community water systems and non-transient, non-community water systems: Glyphosate, MCL 0.7 mg/L.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/08

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.