

PAN Pesticides Database - Chemicals

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Glyphosate - Identification, toxicity, use, water pollution potential, ecological toxicity and regulatory information

Note: See [Working with the Information on this Page](#) section below for important notes about this data.

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Chemical ID	Identifying information, including synonyms, ID numbers, use type, chemical classification, a link to a list of all products containing this chemical and a list of the top crops this pesticide is used on in California.
Poisoning Symptoms	Signs and symptoms of poisoning, first aid, and links to treatment information for this chemical.
Toxicity	Toxicity to humans, including carcinogenicity, reproductive and developmental toxicity, neurotoxicity, and acute toxicity.
Regulatory	Links to world-wide registration status as well as regulatory information for the U.S. and California.
Water	Water quality standards and physical properties affecting water contamination potential.
Ecotoxicity	Toxicity to aquatic organisms.
Related Chems	List of chemicals in the same family, including breakdown products, salts, esters, isomers, and other derivatives.

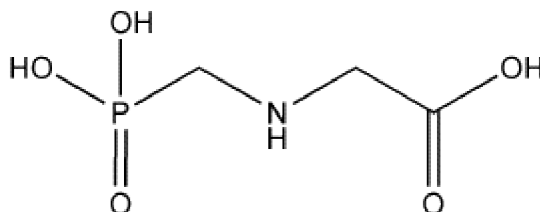
Chemical Identification and Use for Glyphosate

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Basic Identification Information About This Chemical

Chemical Name:	Glyphosate
CAS Number:	1071-83-6
U.S. EPA PC Code:	417300 471300 (Old US EPA PC Code.)
CA DPR Chem Code:	2997
Molecular Weight:	169.09

[Molecular Structure:](#)



Use Type:	 Herbicide
Chem Class:	 Phosphonoglycine
	View Related Chemicals

Additional Resources About This Chemical Class and Use Type

See the [Global Pesticide Resources](#) page for many additional links.

Historical Use of this Chemical

Top five crops and sites for this pesticide in California

 [Almonds](#)  [Pistachios](#)  [Right of Way](#)  [Uncultivated Agricultural Area](#)  [Corn for Forage](#)

 [View All Crops and Sites](#)

Other Names for this Chemical

[About Chemical Synonyms](#)

02997 (CA DPR Chem Code) , 1071-83-6 (CAS Number) , 1071836 , 1071836 (CAS Number) , 2997 (CA DPR Chem Code) , 417300 (US EPA PC Code) , 471300 (Old US EPA PC Code) , 471300 (US EPA PC Code) , CP 67573 , Glifosate , Glifosato , Glifoz?t , Glycine, N-(phosphonomethyl)- , Glyfosaat , glyfosat , Glyphosat , Glyphosate , Glyphosate (ANSI) , Glyphosate acid , glyphosate acide , Glyphosphate , N-(Phosphonomethyl)glycine , Round-up , Roundup , Use code no. 417300

Products Containing This Chemical

Current and historic U.S. registered products

[View U.S. Products](#)



All Products



Currently Registered Products

Signs and Symptoms of Glyphosate Poisoning

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NOTE! There may be other diseases and chemicals that have similar symptoms.



If you have a poisoning emergency in the United States call 1-800-222-1222.

If the victim has collapsed or is unconscious, call 911.

Glyphosate is a Glyphosate compound.

[Report a Poisoning](#)

Symptoms of Poisoning with Glyphosate Compounds

[Find Products Containing this Chemical](#)

- Formulations may show moderate toxicity.
- The trimethylsulfonium salt causes eye irritation in rabbits; some formulations may cause much more extreme irritation of the skin or eyes.
- Some formulations may show high acute inhalation toxicity.

Source for Group Symptoms: [Extension Toxicology Network \(EXTOXNET\), Oregon State University, June 1996.](#)

Treatment for Glyphosate Poisoning

See: [Recognition and Management of Pesticide Poisoning, 5th edition, U.S. EPA, Chapter 13, March 1999.](#)

Symptoms of Glyphosate Exposure from the International Chemical Safety Cards (ICSC)		Report a Poisoning
View full ICSC Cards: English Español Française Chinese Dutch Finnish German Hungarian Japanese Swahili Thai Urdu		
NOTE! PREVENT DISPERSION OF DUST!		
Route of Exposure	Symptoms	First Aid
Inhalation	Cough. (See Ingestion).	Fresh air rest. Refer for medical attention.
Skin		Rinse skin with plenty of water or shower.
Eyes	Redness.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible) then take to a doctor.
Ingestion	Diarrhoea. Shortness of breath. Vomiting. Weakness.	Rinse mouth. Refer for medical attention.
Notes for ICSC Information		
The alkali metal and amine salts are readily soluble in water. Carrier solvents used in commercial formulations may change physical and toxicological properties. Roundup (for the monoisopropylammonium salt) and Polado (for the sesquisodium salt) are trade names.		

Symptoms of Glyphosate Exposure from Other Sources

- Formulations may show moderate toxicity.
- The trimethylsulfonium salt causes eye irritation in rabbits; some formulations may cause much more extreme irritation of the skin or eyes.
- Some formulations may show high acute inhalation toxicity.

Source for Symptoms: [Extension Toxicology Network \(EXTOXNET\), Oregon State University, June 1996.](#) (ExToxNet)


First Aid for Glyphosate Poisoning

No first aid available for this particular chemical. Get medical aid.

Source for First Aid: ()


Toxicity Information for Glyphosate


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 **Note:** Information for many chemicals is incomplete and may not be fully representative of effects on humans. [Why?](#)

Summary Toxicity Information

PAN Bad Actor Chemical ¹	Acute Toxicity ²	Carcinogen	Cholinesterase Inhibitor	Ground Water Contaminant	Developmental or Reproductive Toxin	Endocrine Disruptor
Not Listed	Slight	Not Likely	No			


 Indicates high toxicity in the given toxicological category.

 Indicates no available [weight-of-the-evidence](#) summary assessment. For additional information on toxicity from scientific journals or registration documents, see the "Additional Resources for Toxicity" section of the [chemical detail page](#).

1. [PAN Bad Actors](#) are chemicals that are one or more of the following: highly acutely toxic, cholinesterase inhibitor, known/probable carcinogen, known groundwater pollutant or known reproductive or developmental toxicant. NOTE! Because there are no authoritative lists of Endocrine Disrupting (ED) chemicals, EDs are not yet considered PAN Bad Actor chemicals.

2. The acute toxicity reported on this page is of the pure chemical ingredient only and may not reflect the acute toxicity of individual pesticide products. To view acute toxicity of individual products, click on 'View Products' link in the '[Chemical Identification](#)' section above.

Additional Resources about the Toxicity of this Chemical

Additional Toxicity Info for this Chemical 

See the [Global Pesticide Resources](#) page for many additional links.

Detailed Toxicity Information

Acute Toxicity²

[WHO Acute Hazard](#)

U, Unlikely to be Hazardous

[TRI Acute Hazard](#)

Not Listed

[Material Safety Data Sheets](#)

Not Available

[Acute rating from U.S. EPA product label](#)

[U.S. NTP Acute Toxicity Studies](#)

Not Acutely Toxic to Slightly Toxic

 [View Studies](#)

[Cholinesterase Inhibitor](#)

No

2. The acute toxicity reported on this page is of the pure chemical ingredient only and may not reflect the acute toxicity of individual pesticide products. To view acute toxicity of individual products, click on 'View Products' link in the '[Chemical Identification](#)' section above.

Cancer Information

IARC Carcinogens	Not Listed
U.S. NTP Carcinogens	Not Listed
California Prop 65 Known Carcinogens	Not Listed
U.S. EPA Carcinogens	E, Unlikely
TRI Carcinogen	Not Listed

Endocrine Disruption

Illinois EPA list	Not Listed
Keith list	Not Listed
Colborn list	Not Listed
Benbrook list	Not Listed
Danish Inert list	Not Listed
EU list	Not Listed

Reproductive and Developmental Toxicity

CA Prop 65 Developmental Toxin	Not Listed
U.S. TRI Developmental Toxin	Not Listed
CA Prop 65 Female Reproductive Toxin	Not Listed
CA Prop 65 Male Reproductive Toxin	Not Listed
U.S. TRI Reproductive Toxin	Not Listed

Chemicals of Special Concern

PAN Bad Actors	Not Listed
PAN Dirty Dozen list	Not Listed

Water Pollution Potential and Criteria for Glyphosate

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Water Pollution Potential

PAN Ground Water Contaminant Rating	Insufficient Data
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Water Standards and Criteria

U.S. National Drinking Water Standards and Health Criteria	µg/L unless noted
Maximum Contaminant Level (MCL)	700.0
Maximum Contaminant Level Goal (MCLG)	700.0

One Day Exposure Health Advisory Level	20,000	
Ten Day Exposure Health Advisory Level	20,000	
Lifetime Exposure Health Advisory Level	700.0	
Reference Dose	100.0 (µg/kg/day)	Notes: 5-2
U.S. Drinking Water Equivalent Level	4,000	
Lifetime Estimated Cancer Risk (cases per 1,000,000)		

Canada Drinking Water Standards and Criteria	µg/L unless noted	
Maximum Acceptable Concentration (MAC)		
Interim Maximum Acceptable Concentration (IMAC)	280.0	
Aesthetic Objectives		

Canadian Water Quality Guidelines for the Protection of Aquatic Life	µg/L unless noted	
Fresh Water Guidelines	65	Notes: c
Salt Water Guidelines		

Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses	µg/L unless noted	
Irrigation Water Guidelines		
Livestock Water Guidelines	280	

Regulatory Information for Glyphosate

International Regulatory Status

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[Registration in Selected Countries](#)  [Registration in Selected Countries: Glyphosate](#)

UNEP Persistent Organic Pollutant (POP)	Not Listed
UNEP Prior Informed Consent Chemical (PIC)	Not Listed
WHO Obsolete Pesticide	Not Listed

U.S. and California Regulatory Status

U.S. EPA Registered	Yes
U.S. EPA Hazardous Air Pollutant	Not Listed
U.S. EPA Minimum Risk Pesticide (25b list)	No
CA Registered	Yes

[CA Groundwater Contaminant](#)

Not Listed

[CA Toxic Air Contaminant](#)

Not Listed

Maximum Tolerance and Residue Levels

Codex Alimentarius

[Go to web site](#)

(UN FAO Maximum Residue Limits)

U.S. Maximum Tolerance Levels


[Go to web site](#)

European Union Maximum Residue Levels














[Go to web site](#)

Ecotoxicity for Glyphosate





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 **Note!** Information for many chemicals is incomplete and may not be fully representative of effects on the environment. [Why?](#) Click on underlined terms for definitions and additional information.

Aquatic Ecotoxicity

All Toxic Effects for Organism Group	
Organism Group	Effects Noted
 Amphibians	Biochemistry
 AquaticPlants	Accumulation, Development, Growth, Physiology, Population
 Crustaceans	Mortality
 Echinoderms	Development
 Fish	Accumulation, Avoidance, Biochemistry, Enzyme(s), Histology, Intoxication, Mortality
 Insects	Intoxication, Population
 Molluscs	Development, Enzyme(s), Growth, Mortality, Physiology
 NematodesandFlatworms	Population
 Phytoplankton	Biochemistry, Physiology, Population
 TerrestrialPlants	Growth
 Zooplankton	Intoxication, Mortality, Population
 ~ Un-Assigned	Population
 View All Aquatic Ecotoxicity Studies and References	

Summary of Acute Toxicity for Organism Group











































Organism Group	Average Acute Toxicity	Acute Toxicity Range
 Crustaceans	Moderately Toxic	Moderate Toxicity
 Fish	Slightly Toxic	Not Acutely Toxic to Moderate Toxicity
 Zooplankton	Slightly Toxic	Slight to Very High Toxicity
 View All Acute Summaries		

Terrestrial Ecotoxicity

We are seeking funding to incorporate terrestrial ecotoxicity data analogous to the aquatic ecotoxicity data in the space above. Watch this space!


Related Chemicals for Glyphosate

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CAS Number	Relation	Reason	Chemical Name	Chem Detail	Registration	Symptoms	California Use	Chem Use Type	U.S. EPA Reg	PAN Bad Actor
1071-83-6	Parent	P	Glyphosate	 View	 View	 View	 View	Herbicide	Yes	Not Listed
1066-51-9	Related	5a	(Aminomethyl)phosphonic acid	 View	 View	 View	 View	Breakdown product	No	Not Listed
69254-40-6	Related	1	Glyphosate, diammonium salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
	Related	1	Glyphosate, dimethylammonium salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
	Related	1	Glyphosate, ethanolamine salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
38641-94-0	Related	1	Glyphosate, isopropylamine salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
114370-14-8	Related	1	Glyphosate, monoammonium salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
70901-20-1, 39600-42-5	Related	1	Glyphosate, potassium salt	 View	 View	 View	 View	Herbicide	Yes	Not Listed
70393-85-0	Related	1	Glyphosate, sodium sesqui salt	 View	 View	 View	 View	Herbicide	No	Not Listed
81591-81-3	Related	1	Glyphosate-trimesium	 View	 View	 View	 View	Herbicide	No	Not Listed
	Related	5a	N-Acetylglyphosate	 View	 View	 View	 View	Breakdown product	No	Not Listed

Working with the Information on this Page

Click on underlined terms for definitions or go to the [Pesticide Tutorial](#) overview page.

Any underlined term with a book icon  has additional information.

* Data marked with an asterisk indicates that this chemical is not explicitly listed on the corresponding list. Instead, it belongs to a group of chemicals that IS designated on the list. For example, if an agency assigns a classification of reproductive toxicant to "mercury compounds", that classification is applied to all mercury compounds in the PAN Pesticide database, which are then marked with an asterisk.

To print this page, choose **Print**. To export this data, choose **Save As 'HTML Source'** and open it in Excel or equivalent program.

Citation: Kegley, S.E., Hill, B.R., Orme S., Choi A.H., *PAN Pesticide Database*, Pesticide Action Network, North America (San Francisco, CA, 2009), <http://www.pesticideinfo.org>.

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