

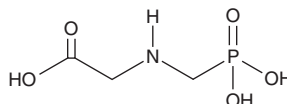
# PRODUCT INFORMATION



## Glyphosate

Item No. 28858

CAS Registry No.: 1071-83-6  
Formal Name: N-(phosphonomethyl)-glycine  
Synonym: NSC 151063  
MF:  $C_3H_8NO_5P$   
FW: 169.1  
Purity:  $\geq 95\%$   
Supplied as: A solid  
Storage:  $-20^\circ\text{C}$   
Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Glyphosate is supplied as a solid. A stock solution may be made by dissolving the glyphosate in the solvent of choice, which should be purged with an inert gas. Glyphosate is slightly soluble in the organic solvent DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of glyphosate can be prepared by directly dissolving the solid in aqueous buffers. Glyphosate is slightly soluble in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

Glyphosate is a broad-spectrum, post-emergence herbicide.<sup>1</sup> It inhibits the activity of 5-enolpyruvyl-shikimate-3-phosphate synthase (EPSPS;  $IC_{50} = 5\text{--}7\text{ }\mu\text{M}$  in a cell-free *A. aerogenes* extract), an enzyme in the shikimate pathway that catalyzes the conversion of shikimic acid to anthranilic acid.<sup>2,3</sup> Foliar application of glyphosate induces foliage and rhizome necrosis of johnsongrass (*S. halepense*) when applied at concentrations ranging from 0.56 to 2.24 kg/hectare.<sup>4</sup> It has been found in soil, surface water, and groundwater samples.<sup>3</sup> Formulations containing glyphosate have been used for weed control in agriculture and horticulture.

### References

1. Araújo, A.S.F., Monteiro, R.T.R., and Abarkeli, R.B. Effect of glyphosate on the microbial activity of two Brazilian soils. *Chemosphere* **52**(5), 799-804 (2003).
2. Steinrücken, H.C. and Amrhein, N. The herbicide glyphosate is a potent inhibitor of 5-enolpyruvyl-shikimic acid-3-phosphate synthase. *Biochem. Biophys. Res. Commun.* **94**(4), 1207-1212 (1980).
3. Kanissery, R., Geirhe, B., Kadyampakeni, D., et al. Glyphosate: Its environmental persistence and impact on crop health and nutrition. *Plants (Basel)* **8**(11), 499 (2019).
4. Parochetti, J.V., Wilson, H.P., and Burt, G.W. Activity of glyphosate on johnsongrass. *Weed Sci.* **23**(5), 395-400 (1975).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM