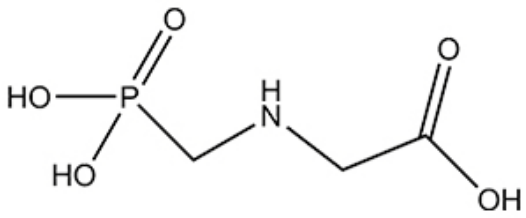
Product Information Sheet

G345
Glyphosate

Synonym:	N-(Phosphonomethyl)glycine
CAS:	1071-83-6
Formula:	$C_3H_8NO_5P$
Molecular Wt:	169.07

Properties

Form:	Powder
Appearance:	White to Off-white Powder
Application:	Plant Growth Regulator
Solubility:	Water
Storage Temp:	2 to 6 ˚C
Typical Working Concentration:	Varies by application. Concentration should be determined by end user.
Storage Temp of Stock Solution:	2 to 6 °C
Other Notes:	Plant Tissue Culture Tested; For Research Use Only



Application Notes

Glyphosate is a potent plant growth regulator; however, it is also a potent growth regulator for bacteria and algae.[2] Its mode of action is to interfere with the shikimate pathway by inhibiting the 5-enolpyruvylshikimate-3-phosphate (EPSP) synthase, which is responsible for the biosynthesis of the aromatic compounds (e.g. tryptophan, phenylalanine, tyrosine) and the 3-deoxy-d-arabino-heptulosonate 7-phosphate (DAHP) synthase isozyme.[3, 4, 5]

It has been reported that single bud explants of low bush blueberry produced more shoots than usual *in vitro* when the mother plant were sprayed with 250 or 500 mg/L of glyphosate solution. Similar result has been reported with stem explants of cranberry when dipped in glyphosate solution of 102.5 mg/L for 30 seconds or 321.2 mg/L for 5 seconds.[6]

Please Note: While *Phyto*Technology Laboratories™ tests each lot of this product with two or more plant cell/ tissue culture lines, it is the sole responsibility of the purchaser to determine the appropriateness of this product for the specific plants that are being cultured and applications that are being used.

References

1. *Merck* **13**, 4525
2. Rubin, Judith L., C. Greg Gaines, and Roy A. Jensen. 1984. Glyphosate inhibition of 5-enolpyruvylshikimate 3-phosphate synthase from suspension-cultured cells of *Nicotiana silvestris*. *Plant Physiol.*75:839-845.
3. Jiang, Ling-Xue, Long-Guo Jin, Yong Guo, Bo Tao, and Li-Juan Qiu. 2013. Glyphosate effects on the gene expression of the apical bud in soybean (*Glycine max)*. Biochemical and Biophysical Research Communications. 437:544-549.
4. Singer, Susan R. and Carl N. McDaniel. 1985. Selection of glyphosate-tolerant tobacco calli and the expression of this tolerance in regenerated plants. *Plant Physiol.* 78:411-416.
5. Nafziger, Emerson D., Jack M. Widholm, Hans C. Steinrucken, and John L. Killmer. 1984. Selection and characterization of a carrot cell line tolerant to glyphosate. *Plant Physiol.* 76:571-574.
6. George, E. 1993. Plant propagation by tissue culture. Part 1. The technology. Edington: Exegetics.

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