



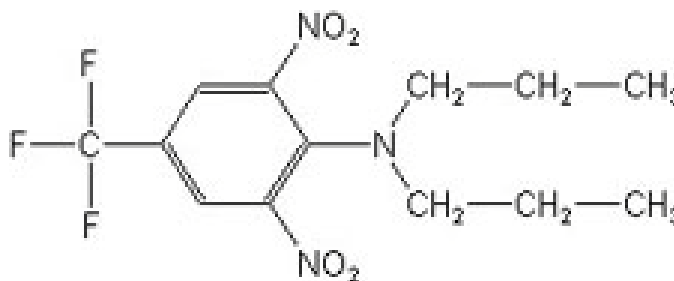
## Product Information Sheet

### T828 Trifluralin

Synonym:  $\alpha,\alpha,\alpha$ -Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine  
CAS: 1582-09-8  
Formula:  $C_{13}H_{16}F_3N_3O_4$   
Molecular Wt: 335.28

#### Properties

Form: Powder  
Appearance: Dark Orange Powder  
Application: Plant Growth Regulator  
Solubility: DMSO  
Storage Temp: Room Temperature  
Typical Working Concentration: Varies by application. Concentration should be determined by end user.  
Other Notes: Plant Tissue Culture Tested; For Research Use Only



#### Application Notes

Trifluralin is a growth retardant. Its main mode of action is to disrupt cell mitosis by inhibiting the polymerization of microtubules which causes misconfiguration and losses of function, thus misaligns and separates the chromosomes, and ultimately inhibits the formation of the mitotic spindles.<sup>2,3</sup>

Trifluralin has been reported to affect mostly radicle development on both main and secondary roots. For seed culture, trifluralin inhibits seed germination, radicle and hypocotyl cell formation.<sup>2</sup> It has also been reported that trifluralin is more effective on monocotyledon (e.g. maize, wheat, barley, sorghum) than dicotyledon plants. A treatment of maize root with 5 $\mu$ M of trifluralin has been shown to decrease root length and enlarge the radicle.<sup>4</sup>

Please Note: While *PhytoTechnology 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**, 9757
2. Thaís C. C. Fernandes, Marcos A. Pizano and Maria A. Marin-Morales (2013). Characterization, Modes of Action and Effects of Trifluralin: A Review, *Herbicides - Current Research and Case Studies in Use*, Dr. Andrew Price (Ed.), ISBN: 978-953-51-1112-2, InTech, DOI: 10.5772/55169. Available from: <http://www.intechopen.com/books/herbicides-current-research-and-case-studies-in-use/characterization-modes-of-action-and-effects-of-trifluralin-a-review>
3. Hess, D. and D. Bayer. 1974. The effect of trifluralin on the ultrastructure of dividing cells of the root meristem of cotton (*Gossypium hirsutum* L. 'Acala 4-42'). *J. Cell Sci.* 15:429-441.
4. Locher, R. and P.E. Pilet. 1995. Trifluralin uptake and its effect on ABA content in growing maize and pea roots. *J. Plant Physiol.* 146:569-571.