



Thidiazuron (THZ)

Technical bulletin

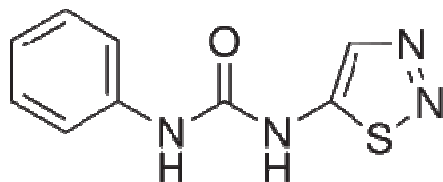
Plant growth regulator, phenyl urea

Action: plant growth regulator absorbed by leaves, which stimulates formation of an abscission layer between the plant stem and the leaf petioles, causing the dropping of entire green leaves

Uses: used for defoliation in order to facilitate harvesting.

Application: Thidiazuron (TDZ) is a plant growth regulator used in micropropagations to supplement media such as Murashige and Skoog medium. TDZ promotes plant organogenesis (shoot regeneration) and plant regeneration. Thidiazuron (TDZ) enables the production of virus-free stock plants, speeds up breeding, and provides new genotypes for the market.

- 1) Common name Thidiazuron
- 2) Structural formula:



- 3) Chemical name: 1-phenyl-3-(1,2,3-thiadiazol-5-yl)urea
- 4) Molecular formula: $C_9H_8N_4OS$
- 5) Molecular weight: 220.2
- 6) CAS no.: [51707-55-2]



Physical chemistry:

- 1) Form: colorless, odorless crystals white to yellow
- 2) Melting point: 210.5 - 212.5°C (decomp.)
- 3) Vapor pressure: 4×10^{-6} mPa (25°C) (Langmuir method)
- 4) $K_{ow} \log P = 1.77$ (pH 7.3)
- 5) Henry: 2.84×10^{-8} Pa m³ mol⁻¹ (calc.)

6) Solubility:

- a) In water: 31 mg/L (pH 7, 25°C)
- b) In hexane: 0.002, methanol 4.20, dichloromethane 0.003, toluene 0.400, acetone 6.67, ethyl acetate 1.1 (all in g/L 20°C)

7) Stability:

- a) Rapidly converted to photo-isomer, 1-phenyl-3-(1,2,5-thiadiazol-3-yl)urea in presence of light ($\lambda > 290$ nm)
- b) Hydrolytically stable at room temperatures, from pH 5 ?9
- c) No decomposition in accelerated storage stability study (14d, 54°C)

8) pKa: 8.86

Technical specification: 95% tech.

Formulation types: EC, WP

Analysis: product analysis by HPLC

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