CERTIFICATE OF ANALYSIS

THIDIAZURON (TDZ)

N-phenyl-N'-(1,2,3-thiadiazol-5-yl)urea

$C_9H_8N_4OS$, MW = 220. 25

OLCHEMIM CODE: 001 316n
OLCHEMIM BATCH: TDZ-B
MANUFACTURING DATE: January 2025
EXPIRATION DATE: January 2033
CAS: 51707-55-2
BATCH SIZE: 1 kg

SYNTHESIS

Chromatographically purified over silica gel and re-crystallised from acetone and ether. A off-white or slightly yellow, microcrystalline solid, soluble in aqueous ethanol. Loss on drying: 0.08%, insoluble residue 0.39%.

ANALYSIS

MELTING POINT: Very sharp melt 210.5-212.5ºC (Kofler block)

UV

Determined after drying to constant weight over phosphorus pentoxide in vacuum.

pH 7.2 (50 mM PBS, 0.15 NaCl)	λ_{max} 269.3 nm (17,900)
pH 2 (≅0.1 M HCl)	λ_{max} 289.4 nm (17,800)
pH 11 (≅0.1 M NaOH)	λ_{max} 275.8 nm (17,800)
50% EtOH	λ_{max} 269.4 nm (18,200)

TLC: (chloroform/MeOH, 9/1), pure product shows single spot only at 20 µg, Rf 0.57, co-chromatographs with authentic. No contaminants detected, including 6-chloropurine detected.

MASS SPECTROMETRY: Matches the reference spectrum $[M+H]^+$= 221.01 amu, ZMD 2000 (Waters) single quadrupole electrospray MS.

HPLC: Samples were dissolved in mobile phase (initial conditions) and separated on RP-column (150 mm × 2.1 mm, 5µm) (Symmetry C18; Waters). The elution was performed with a methanolic gradient (10 mM HCOOH). The flow rate was 0.25 ml/min. The UV absorbance was scanned between 200 – 400 nm. Rt (TDZ) = 22.1 min, λ_{max} = 289.4 nm. Purity > 97.2+%.

STORAGE & STABILITY

Store over silica gel in tightly sealed container at -20°C. No detectable decomposition after 12 months storage under these conditions.

FOR LABORATORY USE BY EXPERIENCED PERSONNEL ONLY; NOT FOR DRUG, HOUSEHOLD OR OTHER USES

OlChemIm s.r.o., Šlechtitelů 27, P.O.Box 22, 770 10 Olomouc, Czech Republic
Tel./Fax: +420 585 427 407
email:info@olchemim.cz, OlChemIm on the Internet: http://www.olchemim.cz