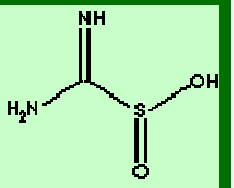
THIOUREA



PRODUCT IDENTIFICATION

CAS NO.	1758-73-2
EINECS NO.	217-157-8; 224-065-1
FORMULA	$H_2NC(=NH)SO_2H$
MOL WT.	108.11
H.S. CODE	2925.29.9000
TOXICITY	Mouse LD (Ora): > 600mg/kg
SYNONYMS	Formamidine sulfinic acid; FAS; Thiourea S,S-dioxide; Aminoimino methanesulfinic acid; Formamidinsulfins urea; Thioharnstoffdioxid; Aminoiminomethansulfins ure; Aminoiminomethanesulfinic acid; Aminoiminomethansulfinsäure (German); ácido aminoiminometanosulfinico (Spanish); Acide aminoiminomethanesulfinique (French); Other RN: 4189-44-0; 23056-93-1; 42580-06-3; 56766-73-5; 110445-04-0; 852937-99-6;
SMILES	C([S@@](O)=O)(N)=N
CLASSIFICATION	Reducing agent.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white powder
MELTING POINT	126 C (Decomposes)
BOILING POINT	
SPECIFIC GRAVITY	1.68
SOLUBILITY IN WATER	soluble (max 27 g/l)
pH	4 at 10 g/l
VAPOR DENSITY	
AUTOIGNITION	
NFPA RATINGS	
REFRACTIVE INDEX	
FLASH POINT	
STABILITY	Decomposes on exposure to light and if heated

GENERAL DESCRIPTION & EXTERNAL LINKS

SALES SPECIFICATION

APPEARANCE	white powder
PURITY	99.0% min
THIOUREA	0.1% max
SULFUR (AS SO4)	0.2% max
MOISTURE	0.1% max
Fe	0.003% max

TRANSPORTATION

PACKING	50kgs in fiber drum , 16 MT in a Container
HAZARD CLASS	
UN NO.	

GENERAL DESCRIPTION OF THIOUREA

Thiourea (also called Thiocarbamide or Sulfourea) is the diamide of thiocarbonic acid that resembles urea but contains sulfur instead of oxygen. 'Thio' is a chemical prefix indicates the replacement of an oxygen in an acid radical by sulfur with a negative valence of 2; meaning 'Sulfur' derived from the Greek theion. In fact, thiourea occurs as the mixture of two

tautomers:$S=C(NH_2)_2$ (Thiourea) + $HS=CNHNH_2$ (Isothiourea), accordingly, provides three functional groups (mino, imino, and thiol). Thiourea is a lustrous white crystalline compound; estimated melting point is 170-180 C; soluble in water and in polar organic solvents; insoluble in non-polar solvents. The exact melting point and boiling point are not available since rearrangement to ammonium thiocyanate (NH_4SCN) occurs at about 135 C and decomposition occurs. It can be prepared by heating ammonium thiocyanate, or by the addition of hydrogen sulfide to cyanamide. The latter is the more common method. Thiourea is used directly in ore filtering, metal refinery and cleaning, isomerization catalyst (conversion of maleic to fumaric acid) and as an additive in fertilizers to (inhibit the nitrification process), drilling auxiliaries, light-sensitive photocopy paper and explosives. It is used as a fixing agent in photography, as a liquefying agent in animal hide glue, as an insecticide, as a textile-treating agent, and as an intermediate to produce other compounds. Thiourea and its derivatives are versatile intermediates for the synthesis of modified thermosetting resins, thiourea dioxide, dyes, flame retardants, vulcanization accelerators, plant protection agents, pesticides, amino resins, peptizing agents, fungicides, hair preparations, dry cleaning chemicals, corrosion inhibitors and thiazole drugs (e.g., antiseptic, thyrotherapeutic, narcotic, and tuberculostatic agents). Dithiobiurea possesses a wide dipole moment and thus is involved in the forming wide metal chelated complexes as the radioactiv-compound which used in radiopharmaceutical imaging, inhibiting enzyme function, kidney function study and to treat toxic metal poisoning. It is used in co-crystals development used in the field of nonlinear optics to generate new coherent wavelengths.