ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Potassium thiocyanate

Revision Date:2026-05-31 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name	: Potassium thiocyanate
CBnumber	: CB8853514
CAS	: 333-20-0
EINECS Number	: 206-370-1
Synonyms	: KSCN,Potassium thiocyanate

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312 IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

Hazard statements

H318 Causes serious eye damage

H412 Harmful to aquatic life with long lasting effects

SECTION 3: Composition/information on ingredients

Substance

Product name	: Potassium thiocyanate
Synonyms	: KSCN,Potassium thiocyanate
CAS	: 333-20-0
EC number	: 206-370-1
MF	: CKNS
MW	: 97.18

SECTION 4: First aid measures

General advice

Show this safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. If breathing stops: mouthto-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Protection of first-aiders

For personal protection see section 8.

Notes to physician

No data available

SECTION 5: Firefighting measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting

Not combustible. Ambient fire may liberate hazardous vapours.

Hazardous combustion products

Carbon oxides Nitrogen oxides (NOx) Sulphur oxides Potassium oxides

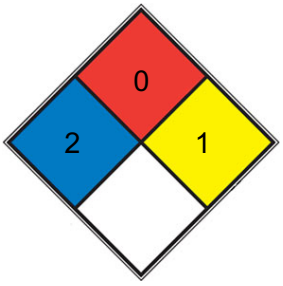
Specific extinguishing methods

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

NFPA 704



■	HEALTH	2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. diethyl ether, ammonium phosphate, iodine)
■	FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
■	REACT	1	Normally stable, but can become unstable at elevated temperatures and pressures (e.g. propene)
□	SPEC. HAZ.		

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of

properly. Clean up affected area. Avoid generation of dusts.

SECTION 7: Handling and storage

Handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Storage

Further information on storage conditions

Tightly closed. Dry.

Materials to avoid

Do not store near acids.

Storage class

13, Non Combustible Solids

Recommended storage temperature

Recommended storage temperature see product label.

Further information on storage stability

Product is sensitive to light and moisture.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures

No data available

Personal protective equipment

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type

Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Tightly fitting safety goggles

Skin and body protection

protective clothing

Hand protection

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Full contact

Manufacturer

KCL 741 L

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Splash contact

Manufacturer

KCL 741 L

Remarks

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D- 36124 Eichenzell, Internet: www.kcl.de).

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

powder

Appearance

crystalline white

Odor

odourless

Odor Threshold

Not applicable

pH

4.8 (20.1 °C)

Concentration: 1,070 g/l

GLP: yes

Melting point/ range

173 °C

Method: lit.

Boiling point/boiling range

<= 400 °C (1,013 hPa)

Method: OECD Test Guideline 103

GLP: yes

Flash point

500°C

Evaporation rate

No data available

Flammability (solid, gas)

The product is not flammable.

Method: Flammability (solids)

GLP: yes

Burning rate

No data available

Self-ignition : GLP: yes not auto-flammable

Upper explosion limit / Upper flammability limit

Not applicable

Lower explosion limit / Lower flammability limit

Not applicable

Vapor pressure

< 0.1 hPa (20 °C)

Method: OECD Test Guideline 104

GLP: yes

Relative vapor density

No data available

Relative density

1.91 (20 °C)

Method: OECD Test Guideline 109

GLP: yes

Density

1.890 g/cm3 (20 °C)

Water solubility

1,000 g/l completely soluble (20 °C)

Method: OECD Test Guideline 105

GLP: yes

Partition coefficient: n-octanol/water

Not applicable for inorganic substances

Autoignition temperature

not combustible

Decomposition temperature

500 °C

Viscosity, dynamic

No data available

Viscosity, kinematic

No data available

Flow time

No data available

Explosive properties

No data available

Oxidizing properties

The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, Oxidizing properties).

GLP: yes

Molecular weight

97.18 g/mol

Particle characteristics Particle size

No data available

Solubility

H_2O: 8 M at 20 °C, clear, colorless

Physical state

Liquid

Colour

colorless or white

Absorption

cut-off at 274nm in H2O at 8M

SECTION 10: Stability and reactivity

Reactivity

No data available

Reactivity

Contact with acids liberates very toxic gas.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of explosion with: perchloryl fluoride Strong oxidizing agents Generates dangerous gases or fumes in contact with: Acids Possible formation of: Hydrogen cyanide (hydrocyanic acid) Risk of ignition or formation of inflammable gases or vapours with: Chlorites Generates dangerous gases or fumes in contact with: Acids

Conditions to avoid

Avoid moisture. no information available

Incompatible materials

No data available

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 854 mg/kg

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Lungs, Thorax, or Respiration:Dyspnea.

(RTECS)

Acute toxicity estimate Inhalation - 1.6 mg/l - dust/mist (Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Possible damages:, May cause irritation of respiratory tract.

Acute toxicity estimate Dermal - 1,100 mg/kg (Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation - 5 min (Regulation (EC) No. 440/2008, Annex, B.46)

Remarks: The value is given in analogy to the following substances: sodium thio- cyanate

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irreversible effects on the eye (OECD Test Guideline 405)

Remarks: The value is given in analogy to the following substances: sodium thio- cyanate

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: negative (OECD Test Guideline 429)

Remarks: The value is given in analogy to the following substances: sodium thio- cyanate

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Remarks: The value is given in analogy to the following substances: sodium thio- cyanateTest Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: The value is given in analogy to the following substances: Ammonium thiocyanateTest Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Remarks: The value is given in analogy to the following substances: sodium thio- cyanateCarcinogenicity

No data available

Reproductive toxicity

Classified based on available data. For more details, see section 2

Specific target organ toxicity - single exposure

Classified based on available data. For more details, see section 2

Specific target organ toxicity - repeated exposure

Classified based on available data. For more details, see section 2

Aspiration hazard

Classified based on available data. For more details, see section 2

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 92 d - No observed adverse effect level - 20 mg/kg

Remarks: The value is given in analogy to the following substances: Ammonium thiocyanate

RTECS: XL1925000

Nausea, Headache, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption: agitation, spasms ataxia (impaired locomotor coordination)

Systemic effects:

CNS disorders cardiovascular disorders

After long-term exposure to the chemical:

Changes in the blood count

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

Ecotoxicity

Components:

Potassium thiocyanate:

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)): 65 mg/l End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanate

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3.56 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanate

Toxicity to algae/aquatic plants

ErC50 (Pseudokirchneriella subcapitata): > 234.3 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanate

Toxicity to fish (Chronic toxicity)

NOEC (Pimephales promelas (fathead minnow)): 1.84 mg/l Exposure time: 124 d Test Type: flow-through test Analytical monitoring: yes Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

EC50 (Daphnia magna (Water flea)): 2.6 mg/l End point: reproduction rate Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanate

Toxicity to microorganisms

NOEC (activated sludge): >= 2 mg/l Exposure time: 28 d Test Type: static test Method: OECD Test Guideline 301D GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanateThe value is given in analogy to the following substances: Potassium thiocyanate

Ecotoxicology Assessment

Chronic aquatic toxicity

Harmful to aquatic life with long lasting effects.

Persistence and degradability

Components:

Potassium thiocyanate:

Biodegradability

aerobic Inoculum: activated sludge Concentration: 2 mg/l Result: Readily biodegradable. Biodegradation: 80 % Exposure time: 28 d Method: OECD Test Guideline 301D GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ammonium thiocyanate

Bioaccumulative potential

Components:

Potassium thiocyanate:

Bioaccumulation

Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 13.4 Exposure time: 16 Weeks Concentration: 35000 µg/l

Partition coefficient: noctanol/water

Remarks: Not applicable for inorganic substances

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13: Disposal considerations

Disposal methods

Waste from residues

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

International Regulations

IATA-DGR

Not regulated as a dangerous good

UN/ID No. : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

Packing instruction (cargo aircraft) : Not applicable

Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

Not regulated as a dangerous good

UN number : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

EmS Code : Not applicable

Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

JT/T 617

UN number : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

Environmentally hazardous : no

Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals

Hazardous Chemicals for Priority Management

Not applicable under SAWS

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import and Export

Not applicable

SECTION 16: Other information

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals

ANTT - National Agency forTransport by Land of Brazil

ASTM - American Society for the Testing of Materials

bw - Body weight

CMR - Carcinogen, Mutagen or Reproductive Toxicant

DIN -Standard of the German Institute for Standardisation

DSL - Domestic SubstancesList (Canada)

ECx - Concentration associated with x% response

ELx - Loading rate associated with x% response

EmS - Emergency Schedule

ENCS - Existing and NewChemical Substances (Japan)

ErCx - Concentration associated with x% growth rate response

ERG - Emergency Response Guide

GHS - Globally Harmonised System

GLP - Good Laboratory Practice

IARC - International Agency for Research on Can- cer

IATA - International Air Transport Association

IBC - International Code for theConstruction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IC50 -Half maximal inhibitory concentration

ICAO - International Civil Aviation Organiza- tion

IECSC - Inventory of Existing Chemical Substances in China

IMDG - Interna- tional Maritime Dangerous Goods

IMO - International Maritime Organisation

ISHL -Industrial Safety and Health Law (Japan)

ISO - International Organisation forStandardisation

KECI - Korea Existing Chemicals Inventory

LC50 - Lethal Concen- tration to 50 % of a test population

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)

MARPOL - International Convention for the Prevention of Pol- lution from Ships

MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods

n.o.s. - Not Otherwise Specified

Nch - Chilean Norm

NO(A)EC - No Observed (Adverse) Effect Concentration

NO(A)EL - No Observed (Adverse) Ef- fect Level

NOELR - No Observable Effect Loading Rate

NOM - Official MexicanNorm

NTP - National Toxicology Program

NZIoC - New Zealand Inventory of Chem- icals

OECD - Organisation for Economic Co-operation and Development

OPPTS - Of- fice of Chemical Safety and Pollution Prevention

PBT - Persistent, Bioaccumulative and Toxic substance

PICCS - Philippines Inventory of Chemicals and Chemical Sub- stances

(Q)SAR - (Quantitative) Structure Activity Relationship

REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning theRegistration, Evaluation, Authorisation and Restriction of Chemicals

SADT - Self-Accelerating Decomposition Temperature

SDS - Safety Data Sheet

TCSI - TaiwanChemical Substance Inventory

TDG - Transportation of Dangerous Goods

TECI -Thailand Existing Chemicals Inventory

TSCA - Toxic Substances Control Act (UnitedStates)

UN - United Nations

UNRTDG - United Nations Recommendations on theTransport of Dangerous Goods

vPvB - Very Persistent and Very Bioaccumulative

WHMIS - Workplace Hazardous Materials Information System