

## Chemical Safety Data Sheet MSDS / SDS

**BIS(2-THIENYL) KETONE**

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

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

Product name : BIS(2-THIENYL) KETONE  
CBnumber : CB0363152  
CAS : 704-38-1  
EINECS Number : 640-504-3  
Synonyms : Tiotropium Bromide Ep impurity F,di-2-thienyl ketone

**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

Warning

**Precautionary statements**

P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

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

P337+P313 IF eye irritation persists: Get medical advice/attention.

P302+P352 IF ON SKIN: wash with plenty of soap and water.

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

P264 Wash skin thoroughly after handling.

**Hazard statements**

H319 Causes serious eye irritation

H315 Causes skin irritation

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: BIS(2-THIENYL) KETONE
Synonyms	: Tiotropium Bromide Ep impurity F, di-2-thienyl ketone
CAS	: 704-38-1
EC number	: 640-504-3
MF	: C9H6OS2
MW	: 194.27

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## SECTION 4: First aid measures

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

### Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

### Inhalation

Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

### Ingestion

Clean mouth with water. Get medical attention.

### Most important symptoms and effects

No information available.

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Notes to Physician

Treat symptomatically.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

### Extinguishing media which must not be used for safety reasons

No information available.

## Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

## Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 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 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

**SPEC.**  
**HAZ.**

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## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation.

### Environmental Precautions

See Section 12 for additional Ecological Information.

### Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment.

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: Handling and storage

### Handling

Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

### Storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

### Exposure Controls

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### Personal protective equipment

#### Eye Protection

Goggles (European standard - EN 166)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Neoprene	recommendations			
Natural rubber				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

#### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### **Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

### **Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **Environmental exposure controls**

No information available.

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## **SECTION 9: Physical and chemical properties**

### **Information on basic physicochemical properties**

No information available

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### **Physical State**

Solid

### **Odor**

No information available

### **Odor Threshold**

No data available

### **pH**

No information available

### **Melting Point/Range**

89 - 91 °C / 192.2 - 195.8 °F

### **Softening Point**

No data available

### **Boiling Point/Range**

300.73°C (rough estimate)

### **Flash Point**

No information available

Method - No information available

**Evaporation Rate**

Not applicable Solid

**Flammability (solid,gas)**

No information available

**Explosion Limits**

No data available

**Vapor Pressure**

No data available

**Vapor Density**

Not applicable Solid

**Specific Gravity / Density**

1.3731 (rough estimate)

**Bulk Density**

1.3731 (rough estimate)

**Water Solubility**

No information available

**Solubility in other solvents**

Chloroform (Slightly), Ethyl Acetate (Slightly), Methanol (Slightly)

**Partition Coefficient (n-octanol/water)**

No data available

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

Not applicable Solid

**Explosive Properties**

No information available

**Oxidizing Properties**

No information available

**Molecular Formula**

C<sub>9</sub> H<sub>6</sub> O S<sub>2</sub>

**Molecular Weight**

194.28

**Colour**

White to Pale Yellow

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## SECTION 10: Stability and reactivity

**Stability**

Stable under normal conditions.

**Hazardous Reactions**

No information available.

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to Avoid**

Incompatible products.

**Materials to avoid**

Strong oxidizing agents.

**Hazardous Decomposition Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Sulfur oxides.

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## SECTION 11: Toxicological information

**Product Information**

**(a) acute toxicity;**

**(b) skin corrosion/irritation;**

No data available

**(c) serious eye damage/irritation;**

No data available

**(d) respiratory or skin sensitization;**

**Respiratory**

No data available

**Skin**

No data available

**(e) germ cell mutagenicity;**

No data available

**(f) carcinogenicity;**

No data available

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;**

No data available

**(h) STOT-single exposure;**

No data available

**(i) STOT-repeated exposure;**

No data available

**Target Organs**

No information available.

**(j) aspiration hazard;**

Not applicable

Solid

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed**

No information available

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## SECTION 12: Ecological information

**desc\_info**

Ecotoxicity effects	Do not empty into drains.								
Persistence and Degradability	No information available								
Bioaccumulative Potential	No information available								
Mobility in soil	No information available								
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors								
Persistent Organic Pollutant	This product does not contain any known or suspected substance								
Ozone Depletion Potential	This product does not contain any known or suspected substance								

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## SECTION 13: Disposal considerations

## Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

## Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

## Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

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# SECTION 14: Transport information

## Road and Rail Transport

### UN-No

UN2811

### Proper Shipping Name

Toxic solid, organic, n.o.s.

### Hazard Class

6.1

### Packing Group

III

## IMDG/IMO

### UN-No

UN2811

### Proper Shipping Name

Toxic solid, organic, n.o.s.

### Hazard Class

6.1

### Packing Group

III

## IATA

### UN-No

UN2811

### Proper Shipping Name

TOXIC SOLID, ORGANIC, N.O.S.\*

### Hazard Class

6.1

### Packing Group

III

### Special Precautions for User

No special precautions required

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## SECTION 15: Regulatory information

### International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

### National Regulations

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## SECTION 16: Other information

### Prepared By

Health, Safety and Environmental Department

### Revision Date

30-Oct-2025

### Revision Summary

Not applicable.

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

### Legend

#### CAS

Chemical Abstracts Service

#### TSCA

United States Toxic Substances Control Act Section 8(b)

Inventory

#### EINECS/ELINCS

European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

#### DSL/NDSL

Canadian Domestic Substances List/Non-Domestic Substances List

#### PICCS

Philippines Inventory of Chemicals and Chemical Substances

#### ENCS

Japanese Existing and New Chemical Substances

#### IECSC

Chinese Inventory of Existing Chemical Substances

**AICS**

Australian Inventory of Chemical Substances

**KECL**

Korean Existing and Evaluated Chemical Substances

**NZIoC**

New Zealand Inventory of Chemicals

**WEL**

Workplace Exposure Limit

**TWA**

Time Weighted Average

**ACGIH**

American Conference of Governmental Industrial Hygienists

**IARC**

International Agency for Research on Cancer

**DNEL**

Derived No Effect Level

**PNEC**

Predicted No Effect Concentration

**RPE**

Respiratory Protective Equipment

**LD50**

Lethal Dose 50%

**LC50**

Lethal Concentration 50%

**EC50**

Effective Concentration 50%

**NOEC**

No Observed Effect Concentration

**POW**

Partition coefficient Octanol:Water

**PBT**

Persistent, Bioaccumulative, Toxic

**vPvB**

very Persistent, very Bioaccumulative

**ICAO/IATA**

International Civil Aviation Organization/International Air

Transport Association

**IMO/IMDG**

International Maritime Organization/International Maritime

Dangerous Goods Code

**ADR**

European Agreement Concerning the International Carriage of

Dangerous Goods by Road

**MARPOL**

International Convention for the Prevention of Pollution from  
Ships

**OECD**

Organisation for Economic Co-operation and Development

**ATE**

Acute Toxicity Estimate

**BCF**

Bioconcentration factor

**VOC**

(Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

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