

## Chemical Safety Data Sheet MSDS / SDS

## THORIN

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

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

Product name : THORIN  
CBnumber : CB0471721  
CAS : 3688-92-4  
EINECS Number : 222-993-1  
Synonyms : Thorin,thoron

**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

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**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

**Hazard statements**

H410 Very toxic to aquatic life with long lasting effects

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**SECTION 3: Composition/information on ingredients**

## Substance

Product name	: THORIN
Synonyms	: Thorin,thoron
CAS	: 3688-92-4
EC number	: 222-993-1
MF	: C16H14AsN2NaO10S2
MW	: 556.32

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## SECTION 4: First aid measures

### Eye Contact

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

### Skin Contact

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

### Inhalation

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

### Ingestion

Call a physician immediately. Clean mouth with water.

### 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.

### Thorin

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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.

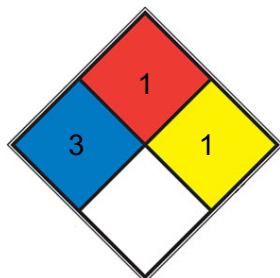
## Specific Hazards Arising from the Chemical

Do not allow run-off from fire-fighting to enter drains or water courses.

## 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** 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE** 1 Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

**REACT** 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

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

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## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation.

### Environmental Precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

### Methods for Containment and Clean Up

Wear self-contained breathing apparatus and protective suit. 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

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Handle

product only in closed system or provide appropriate exhaust ventilation.

## Storage

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

## Specific Use(s)

Use in laboratories

# SECTION 8: Exposure controls/personal protection

## Control Parameters

Thorin ydroxynaphthalene-2,7-disul phonate

Component	China	Taiwan	Thailand	Hong Kong
Disodium 4-[(O-aronophenyl)azo]-3-h-		TWA: 0.5 mg/m3	TWA: 0.5 mg/m3	

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Disodium 4-[(O-aronophenyl)azo]-3-h ydroxynaphthalene-2,7-disul phonate				STEL: 0.3 mg/m3 15 min TWA: 0.1 mg/m3 8 hr Carc. except Arsine	

## 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 MDHS41/2 Arsenic and inorganic compounds of arsenic (except arsine) in air Laboratory method using continuous flow or flow injection analysis hydride generation atomic absorption spectrometry

## 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**

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9: Physical and chemical properties

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

Thorin

#### **Appearance**

Red brown

#### **Physical State**

Powder Solid

#### **Odor**

No information available

**Odor Threshold**

No data available

**pH**

6.1 10 g/L aq.sol.(20°C)

**Melting Point/Range**

No data available

**Softening Point**

No data available

**Boiling Point/Range**

No information available

**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**

No data available

**Bulk Density**

No data available

**Water Solubility**

Soluble

**Solubility in other solvents**

No information available

#### **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**

C16 H11 As N2 Na2 O10 S2

#### **Colour**

Orange to Brown to Dark red

576.29

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## SECTION 10: Stability and reactivity

#### **Stability**

Stable. Hygroscopic.

#### **Hazardous Reactions**

No information available.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

#### **Conditions to Avoid**

Excess heat. Incompatible products. Exposure to moist air or water.

#### **Materials to avoid**

Strong oxidizing agents.

#### **Hazardous Decomposition Products**

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

The table below indicates whether each agency has listed any ingredient as a carcinogen

**(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**

### **Ecotoxicity effects**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

### **Persistence and Degradability**

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

#### **Persistence**

based on information available, May persist.

#### **Degradation in sewage**

Contains substances known to be hazardous to the environment or not degradable in waste

#### **treatment plant**

water treatment plants.

#### **Bioaccumulative Potential**

May have some potential to bioaccumulate

#### **Mobility in soil**

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

#### **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**

Should not be released into the environment. 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**

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

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## **SECTION 14: Transport information**

### **Road and Rail Transport**

#### **UN-No**

UN3465

#### **Proper Shipping Name**

ORGANOARSENIC COMPOUND, SOLID, N.O.S.

#### **Hazard Class**

6.1

#### **Packing Group**

II

### **IMDG/IMO**

#### **UN-No**

UN3465

#### **Proper Shipping Name**

ORGANOARSENIC COMPOUND, SOLID, N.O.S.

#### **Hazard Class**

6.1

#### **Packing Group**

II

### **IATA**

#### **UN-No**

UN3465

#### **Proper Shipping Name**

ORGANOARSENIC COMPOUND, SOLID, N.O.S.\*

#### **Hazard Class**

6.1

#### **Packing Group**

II

#### **Special Precautions for User**

No special precautions required

## 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).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Disodium 4-[(O-arsonophenyl)az o]-3-hydroxynaphthale ne-2,7-disulphonate	-	-	X	-	222-993-1	-	-	-	-	-	X	-

### Note Note 1

The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture

### National Regulations

## SECTION 16: Other information

### 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.

Chemical incident response training.

### 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

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