

# Otto Chemie Pvt Ltd

An ISO 9001 : 2015 & GMP Certified Company  
Office : No 603, 6th Floor, Tardeo AC Market, 87, Tardeo Road,  
Tardeo, Mumbai, Maharashtra 400034, India (BHARAT)  
Tel : + 91 98200 41841 Email : [info@ottokemi.com](mailto:info@ottokemi.com) Web : [www.ottokemi.com](http://www.ottokemi.com)

Creation Date: 20-08-2026

Revision Date: 18-07-2021

## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Product identifiers

Product Name: Cobalt sputtering target, diam. x thickness  
Product Code: C 7659  
CAS No: 7440-48-4

1.2. Relevant identified uses of the substance or mixture and uses advised against  
Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet  
Company identification  
OTTO CHEMIE PVT LTD  
No 603, 6th Floor, Tardeo AC Market, 87, Tardeo Road,  
Tardeo, Mumbai, Maharashtra 400034, India (BHARAT)

1.4. Emergency telephone number  
Phone no. : + 91 98200 41841 (10 : 00 am – 06 : 00 pm)

### SECTION 2: Hazards identification

2.1 Classification of the substance or mixture  
Classification (REGULATION (EC) No 1272/2008)  
Flammable solids, Category 1  
Eye irritation, Category 2  
Respiratory sensitisation, Category 1  
Skin sensitisation, Category 1  
Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 1B  
Reproductive toxicity, Category 1B  
Long-term (chronic) aquatic hazard, Category 4

2.2 Label elements  
Labelling (REGULATION (EC) No 1272/2008)  
Hazard pictograms  
Signal word  
Hazard statements

H228: Flammable solid.  
H319: Causes serious eye irritation.  
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317: May cause an allergic skin reaction.  
H341: Suspected of causing genetic defects.  
H350: May cause cancer.  
H360F: May damage fertility.  
H413: May cause long lasting harmful effects to aquatic life.

:  
: Danger  
: H228 Flammable solid.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H360F May damage fertility.  
H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements

Prevention:  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
Response:  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

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## Additional Labelling

Reduced Labelling (<= 125 ml)

Hazard pictograms

Signal word

Hazard Statements

H334

H317

H341

H413

H350

H360F

Precautionary Statements

P280

P302 + P352

P308 + P313

Supplemental Hazard  
Statements

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

EC-No. : 231-158-0

Components

| Chemical name | CAS-No.<br>EC-No.      | Concentration (%)<br>w/w | M-Factor, SCL, ATE |
|---------------|------------------------|--------------------------|--------------------|
| Cobalt        | 7440-48-4<br>231-158-0 | >= 90 - <= 100           |                    |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : First aiders need to protect themselves.

Show this safety data sheet to the doctor in attendance.

If inhaled : After inhalation: fresh air. 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.

Call in ophthalmologist. Remove contact lenses.

If swallowed : After swallowing: immediately make victim drink water (two glasses at most).

Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

:  
Danger

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause long lasting harmful effects to aquatic life.

May cause cancer.

May damage fertility.

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

IF ON SKIN: Wash with plenty of water.

IF exposed or concerned: Get medical advice/ attention.  
none

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

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.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

Not combustible.

Ambient fire may liberate hazardous vapours.

Hazardous combustion products

Cobalt/cobalt oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters

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

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel:

Avoid generation and inhalation of dusts in all circumstances.

Avoid substance contact.

Ensure adequate ventilation.

Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### 6.2 Environmental precautions

Environmental precautions

Do not let product enter drains.

Risk of explosion.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up carefully. Dispose of properly. Clean up affected area.

Avoid generation of dusts.

### 6.4 Reference to other sections

For disposal considerations see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures : Immediately change contaminated clothing. Apply

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preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions

Tightly closed. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class (TRGS 510) : 4.1B, Flammable solid hazardous materials

Further information on storage stability

Air sensitive.

Handle and store under inert gas.

Packaging material : Suitable material: LDPE Bottle/Jar

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

8.2 Exposure controls

Personal protective equipment

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

Safety glasses

Hand protection

Material : Nitrile rubber

Break through time : 480 min

Glove thickness : 0,11 mm

Protective index : Full contact

Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber

Break through time : 480 min

Glove thickness : 0,11 mm

Protective index : Splash contact

Manufacturer : KCL 741 Dermatril® 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, D36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Skin and body protection : Flame retardant antistatic protective clothing.

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 P3

The entrepreneur 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.

Environmental exposure controls

Advice : Do not let product enter drains.

Risk of explosion.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                     |                                                                      |
|-----------------------------------------------------|----------------------------------------------------------------------|
| Physical state                                      | : solid                                                              |
| Form                                                | : Solid                                                              |
| Color                                               | : No data available                                                  |
| Odor                                                | : No data available                                                  |
| Melting point                                       | : No data available                                                  |
| Boiling point/boiling range                         | : 2.900 °C<br>Method: lit.                                           |
| Flammability                                        | : The substance or mixture is a flammable solid with the category 1. |
| Upper explosion limit /<br>Upper flammability limit | : No data available                                                  |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                                  |
| Flash point                                         | : Not applicable                                                     |
| Autoignition temperature                            | : No data available                                                  |
| Decomposition<br>temperature                        | : No data available                                                  |
| pH                                                  | : No data available                                                  |
| Viscosity, dynamic                                  | : No data available                                                  |
| Viscosity, kinematic                                | : No data available                                                  |
| Flow time                                           | : No data available                                                  |
| Water solubility                                    | : No data available                                                  |
| Partition coefficient: noctanol/water               | : log Pow: 5,0                                                       |
| Vapor pressure                                      | : No data available                                                  |
| Relative density                                    | : No data available                                                  |
| Density                                             | : 8,9 g/mL (25 °C)<br>Method: lit.                                   |
| Relative vapour density                             | : No data available                                                  |
| 9.2 Other information                               |                                                                      |
| Explosives                                          | : No data available                                                  |
| Oxidizing properties                                | : none                                                               |
| Burning rate                                        | : No data available                                                  |
| Evaporation rate                                    | : No data available                                                  |
| Molecular weight                                    | : 58,93 g/mol                                                        |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Conditions to avoid : no information available

### 10.5 Incompatible materials

Materials to avoid : Oxidizing agents

Mineral acids

Acetylene

Hydrazinium nitrate

Material readily reacts with acids generating  
flammable and/or explosive hydrogen gas.

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals:

Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg Inhalation LC50 Rat: > 50mg/L.

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant).

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Special Remarks on Toxicity to Animals: Not available.  
Special Remarks on Chronic Effects on Humans: Not available.  
Special Remarks on other Toxic Effects on Humans: Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Components:

Cobalt:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 100,01 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

End point: Immobilization

Exposure time: 48 h

Test Type: static test

Method: OECD Test Guideline 202

GLP: yes

Toxicity to algae/aquatic plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,270 mg/l

End point: Growth inhibition

Exposure time: 70 h

Test Type: static test

Method: OECD Test Guideline 201

GLP: yes

### 12.2 Persistence and degradability

Components:

Cobalt:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

Components:

Cobalt:

Partition coefficient: octanol/water log Pow: 5,0

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

Product:

Assessment

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

No data available

### 12.7 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14: Transport information

|                                          |                                   |
|------------------------------------------|-----------------------------------|
| 14.1 UN number or ID number              |                                   |
| ADR                                      | : UN 3089                         |
| IMDG                                     | : UN 3089                         |
| IATA                                     | : UN 3089                         |
| 14.2 UN proper shipping name             |                                   |
| ADR                                      | : METAL POWDER, FLAMMABLE, N.O.S. |
| IMDG                                     | : METAL POWDER, FLAMMABLE, N.O.S. |
| IATA                                     | : Metal powder, flammable, n.o.s. |
| 14.3 Transport hazard class(es)          |                                   |
| Class Subsidiary risks                   |                                   |
| ADR                                      | : 4.1                             |
| IMDG                                     | : 4.1                             |
| IATA                                     | : 4.1                             |
| 14.4 Packing group                       |                                   |
| ADR                                      |                                   |
| Packing group                            | : II                              |
| Classification Code                      | : F3                              |
| Hazard Identification                    | : 40                              |
| Number                                   |                                   |
| Labels                                   | : 4.1                             |
| Tunnel restriction code                  | : (E)                             |
| IMDG                                     |                                   |
| Packing group                            | : II                              |
| Labels                                   | : 4.1                             |
| EmS Code                                 | : F-G, S-G                        |
| IATA (Cargo)                             |                                   |
| Packing instruction (cargo aircraft)     | : 448                             |
| Packing instruction (LQ)                 | : Y441                            |
| Packing group                            | : II                              |
| Labels                                   | : Division 4.1 - Flammable solids |
| IATA_P (Passenger)                       |                                   |
| Packing instruction (passenger aircraft) | : 445                             |
| Packing instruction (LQ)                 | : Y441                            |
| Packing group                            | : II                              |
| Labels                                   | : Division 4.1 - Flammable solids |
| 14.5 Environmental hazards               |                                   |
| ADR                                      |                                   |
| Environmentally hazardous                | : no                              |
| IMDG                                     |                                   |
| Marine pollutant                         | : no                              |
| 14.6 Special precautions for user        |                                   |

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments  
Not applicable for product as supplied.

## SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)  
Conditions of restriction for the following entries should be considered:

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Number on list 40

Number on list 75: If you intend  
to use this product as tattoo  
ink, please contact your vendor.

Banned and/or restricted

REACH - Candidate List of Substances of Very  
High Concern for Authorisation (Article 59).

Not applicable

Regulation (EU) No 2024/590 on substances that  
deplete the ozone layer

Not applicable

Regulation (EU) 2019/1021 on persistent organic  
pollutants (recast)

Not applicable

REACH - List of substances subject to  
authorisation (Annex XIV)

Not applicable

Seveso III: Directive 2012/18/EU of the  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

Not applicable

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## SECTION 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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