



SAFETY DATA SHEET

MATERION

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

1.1. Product identifier

Name of the substance Tungsten Tetrachloride Oxide
Identification number 236-863-7 (EC number)
Registration number -
Document number 2PC
Synonyms None.
Materion Code 2PC
Issue date 22-March-2021
Version number 01

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Division Milwaukee
Telephone 414.212.0257
e-mail advancedmaterials@materion.com
Contact person Laura Hamilton

1.4. Emergency telephone number

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

Identified uses The chemical(s) listed herein is not found on the Toxic Substance Control Act chemical substance inventory. This chemical may not be used for commercial purposes. This chemical may be used for research and development purposes only as defined at 40 CFR 710,2(y).
Uses advised against None known.

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Hazard summary Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Tungsten Tetrachloride Oxide

Hazard pictograms



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Precautionary statements

Prevention

P260 Do not breathe dust or mists.
P264 Wash hands thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P330 + P331 Wash contaminated clothing before re-use.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a poison centre/doctor/.
P310 Immediately call a poison centre/doctor.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

None.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Tungsten Tetrachloride Oxide	100	13520-78-0 236-863-7	-	-	

Classification: Skin Corr. 1B;H314, Eye Dam. 1;H318, STOT SE 3;H335

SECTION 4: First aid measures

General information

Consult a physician. Show this safety data sheet to the doctor in attendance. Remove affected person from source of contamination.

4.1. Description of first aid measures

Inhalation

Move into fresh air and keep at rest. If breathing has stopped, perform artificial respiration and obtain medical help. Consult a physician for specific advice.

Skin contact

Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. Call a physician or poison control centre immediately.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Get medical attention immediately. Continue rinsing.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Call a POISON CENTRE or doctor/physician.

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

Not available.

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

Not available.

SECTION 5: Firefighting measures

General fire hazards	Not available.
5.1. Extinguishing media	
Suitable extinguishing media	Water Spray, Fog, CO2, dry chemical, or Alcohol Resistant Foam
Unsuitable extinguishing media	Not available.
5.2. Special hazards arising from the substance or mixture	Hydrogen chloride gas Tungsten oxide
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Wear necessary protective equipment. Avoid generation and spreading of dust. Avoid inhalation of dust and vapours. Ensure adequate ventilation. Immediately evacuate personnel to safe areas.
For emergency responders	Not available.
6.2. Environmental precautions	Do not allow to enter drains, sewers or watercourses.
6.3. Methods and material for containment and cleaning up	Pick up and arrange disposal without creating dust. Sweep up or vacuum up spillage and collect in suitable container for disposal.
6.4. Reference to other sections	Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Handle under inert gas. Protect from moisture.
7.2. Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place. Avoid dust formation. Material should be stored under an inert atmosphere.
7.3. Specific end use(s)	Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	MAK	1 mg/m ³	Inhalable fraction.
	STEL	2 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	MAC	1 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
	STEL	5 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TLV	1 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Finland. Workplace Exposure Limits

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Ireland. Occupational Exposure Limits

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Italy. Occupational Exposure Limits

Material	Type	Value	Form
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	3 mg/m ³	Respirable fraction.

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TLV	1 mg/m ³

Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³

Spain. Occupational Exposure Limits

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Material	Type	Value	Form
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	TWA	1 mg/m ³	Inhalable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Tungsten Tetrachloride Oxide (CAS 13520-78-0)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

General information Handle in accordance with good industrial hygiene and safety practices.

Eye/face protection Use approved safety goggles or face shield.

Skin protection

- Hand protection Wear protective gloves.

- Other Use protective gloves, goggles and suitable protective clothing.

Respiratory protection In case of inadequate ventilation, use respiratory protection.

Thermal hazards Not available.

Hygiene measures Not available.

Environmental exposure controls Not available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance**

Physical state Solid.

Form Not available.

Colour Not available.

Odour Not available.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
9.2. Other information	
Molecular formula	Cl4OW

SECTION 10: Stability and reactivity

10.1. Reactivity	Strong oxidising agents.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Exposure to air.
10.5. Incompatible materials	Strong oxidising substances.
10.6. Hazardous decomposition products	Hazardous decomposition products formed under fire conditions - Tungsten Oxide Hydrogen chloride.

SECTION 11: Toxicological information

General information	Not available.
Information on likely routes of exposure	
Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.
Symptoms	Not available.
11.1. Information on toxicological effects	
Acute toxicity	No data available.
Skin corrosion/irritation	Not available.
Serious eye damage/eye irritation	Not available.
Respiratory sensitisation	Not available.
Skin sensitisation	Not available.
Germ cell mutagenicity	Not available.
Carcinogenicity	
Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)	
Not listed.	
Reproductive toxicity	Not available.

Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	Not available.
12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. UN number	UN3260
14.2. UN proper shipping name	Corrosive solid, acidic, inorganic, n.o.s. (Tungsten tetrachloride oxide)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

IMDG

14.1. UN number	UN3260
14.2. UN proper shipping name	Corrosive solid, acidic, inorganic, n.o.s. (Tungsten tetrachloride oxide)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	No.
EmS	Not available.
14.6. Special precautions for user	Not available.



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Tungsten Tetrachloride Oxide (CAS 13520-78-0)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

National regulations

Not available.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not available.

Revision information

None.

Training information

Not available.