



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 chloride
Identification number	236-293-9 (EC number)
Registration number	-
Document number	2PD
Synonyms	None.
Materion Code	2PD
Issue date	25-March-2021
Version number	02
Revision date	17-February-2023

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

Supersedes date 25-March-2021

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

Identified uses	Not available.
Uses advised against	None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

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

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary

Causes severe skin burns and eye damage. Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects. The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

2.2. Label elements

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

Contains: Tungsten chloride

Hazard pictograms



Signal word Danger

Hazard statements

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Precautionary statements

Prevention

P260 Do not breathe dust/mist/spray.
P264 Wash hands thoroughly after handling.

Response

P301 + P330 + P331 Wash/decontaminate removed clothing before reuse.
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.

Storage

P405 Store locked up.

Disposal

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

Supplemental label information

100% of the substance consists of component(s) of unknown acute oral toxicity. 100% of the substance consists of component(s) of unknown acute dermal toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the substance consists of component(s) of unknown long-term hazards to the aquatic environment. For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Tungsten chloride	100	13283-01-7 236-293-9	-	-	

Classification: Skin Corr. 1B;H314, Eye Dam. 1;H318

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).
M: M-factor
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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 If breathing stops, provide artificial respiration. Move into fresh air and keep at rest. Get medical attention.

Skin contact Call a physician or Poison Control Centre immediately. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water.

Eye contact Continue rinsing. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion Call a poison center or doctor/physician. Rinse mouth thoroughly. Do not induce vomiting. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed Exposure may cause temporary irritation, redness, or discomfort.

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

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Dry chemical, foam, carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

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.

Special firefighting procedures Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Ensure adequate ventilation. For personal protection, see section 8 of the SDS. Wear necessary protective equipment. Avoid generation and spreading of dust. Avoid inhalation of dust and vapours.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Prevent entry into drains.

6.3. Methods and material for containment and cleaning up Pick up and arrange disposal without creating dust. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Wear protective gloves/protective clothing/eye protection/face protection. Use this product with adequate ventilation. Avoid prolonged exposure. Handle under inert gas atmosphere in dry equipment.

7.2. Conditions for safe storage, including any incompatibilities Store in tightly closed container. Keep container tightly closed and dry. Store away from incompatible materials (see Section 10 of the SDS). Keep container in a well-ventilated place.

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 chloride (CAS 13283-01-7)	MAK	5 mg/m ³	Inhalable fraction.
	STEL	10 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 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 chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TLV	5 mg/m ³

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

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³

Finland. Workplace Exposure Limits

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³

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

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

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

Material	Type	Value	Form
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³	Dust.

Ireland. Occupational Exposure Limits

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

Italy. Occupational Exposure Limits

Material	Type	Value	Form
Tungsten chloride (CAS 13283-01-7)	TWA	3 mg/m ³	Respirable fraction.

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

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TLV	5 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 chloride (CAS 13283-01-7)	TWA	5 mg/m ³

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

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

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

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³

Spain. Occupational Exposure Limits

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

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

Material	Type	Value	Form
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Tungsten chloride (CAS 13283-01-7)	TWA	5 mg/m ³	Inhalable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Tungsten chloride (CAS 13283-01-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

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

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment**General information**

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Handle in accordance with good industrial hygiene and safety practices.

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection**- Hand protection**

Wear appropriate chemical resistant gloves.

- Other

Wear full protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. In case of inadequate ventilation use suitable respirator.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

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

Solid.

Form

Powder.

Colour

Not available.

Odour

Slight chlorine.

Odour threshold

Not available.

pH

Not available.

Melting point/freezing point

275 °C (527 °F)

Initial boiling point and boiling range

347 °C (656,6 °F)

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	< 0,0000001 kPa (25 °C (77 °F))
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 explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Molecular formula	Cl6W
Molecular weight	396,54 g/mol
Specific gravity	3,52

SECTION 10: Stability and reactivity

10.1. Reactivity	Contact with water rapidly liberates toxic gas..
10.2. Chemical stability	Material reacts with water.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
10.5. Incompatible materials	Strong acids. Bases. Strong oxidising agents. Reducing Agents.
10.6. Hazardous decomposition products	Chlorine. Metal oxides. Hydrogen chloride.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects. No data on possible toxicity effects have been found.

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on toxicological effects

Acute toxicity	Not known.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	The product contains a substance which may cause long-term adverse effects in the environment. Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.
12.2. Persistence and degradability	No data is available on the degradability of this substance.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
12.6. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

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 chloride)
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 Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number UN3260

14.2. UN proper shipping name Corrosive solid, acidic, inorganic, n.o.s. (Tungsten chloride)

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 Read safety instructions, SDS and emergency procedures before handling.

IATA; IMDG



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 chloride (CAS 13283-01-7)

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.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).

CAS: Chemical Abstract Service.

CEN: European Committee for Standardization.

IATA: International Air Transport Association.

IBC: Intermediate Bulk Container.

IMDG: International Maritime Dangerous Goods.

MAC: Maximum Allowed Concentration.

MARPOL: International Convention for the Prevention of Pollution from Ships.

PBT: Persistent, bioaccumulative, toxic.

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.

STEL: Short term exposure limit.

TLV: Threshold Limit Value.

TWA: Time Weighted Average.

VLE: Exposure Limit Value.

VME: Exposure Average Value.

vPvB: Very persistent and very bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

Training information

Follow training instructions when handling this material.

Disclaimer

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