



PRODUCT INFORMATION SHEET

MATERION

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

1.1. Product identifier

Trade name or designation of the mixture Iridium, Manganese Silicon Product

Synonyms None.

Document number 330

Issue date 02-June-2015

Version number 01

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

Identified uses Not available.

Uses advised against None known.

1.3. Details of the supplier of the product information sheet

Supplier

Company name Materion Advanced Materials Technologies and Services Inc.

Address 5520 Midway Park Place NE
United States

Division

Telephone Not available.

e-mail ehs@materion.com

Contact person Not available.

1.4. Emergency telephone number Not available.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification R52

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

Hazard summary

Physical hazards Not classified for physical hazards.

Health hazards Not classified for health hazards.

Environmental hazards Harmful to aquatic organisms.

Specific hazards Not available.

Main symptoms Not available.

2.2. Label elements

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

Contains: Iridium, Manganese, Silicon carbide

Hazard pictograms None.

Signal word None.

Hazard statements The mixture does not meet the criteria for classification.

Precautionary statements

Prevention Not available.

Response Not available.

Storage Not available.

Disposal Not available.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Iridium	30 - < 70	7439-88-5 231-095-9	-	-	
Classification:	DSD: -				
	CLP: -				
Manganese	10 - < 50	7439-96-5 231-105-1	-	-	
Classification:	DSD: -				
	CLP: -				
Silicon carbide	10 - < 50	409-21-2 206-991-8	-	-	
Classification:	DSD: R14				
	CLP: Water-React. 3;H261				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

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 Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	MAK	0,5 mg/m ³	Inhalable fraction.
	STEL	2 mg/m ³	Inhalable fraction.
Silicon carbide (CAS 409-21-2)	MAK	5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Respirable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,2 mg/m ³	
Silicon carbide (CAS 409-21-2)	TWA	10 mg/m ³	

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	STEL	3 mg/m ³	
	TWA	0,3 mg/m ³	
Silicon carbide (CAS 409-21-2)	TWA	5 mg/m ³	Inhalable fraction.

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	MAC	0,5 mg/m ³	
Silicon carbide (CAS 409-21-2)	STEL	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	5 mg/m ³	

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	Ceiling	2 mg/m ³	
	TWA	1 mg/m ³	

Denmark. Exposure Limit Values

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TLV	0,2 mg/m ³	Dust.
		0,2 mg/m ³	Fume.

Denmark. Exposure Limit Values Components**Type****Value****Form**0,1 mg/m³

Respirable.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**Components****Type****Value****Form**Manganese (CAS
7439-96-5)

TWA

0,2 mg/m³

Total dust.

Silicon carbide (CAS
409-21-2)

TWA

0,1 mg/m³

Respirable dust.

5 mg/m³

Respirable dust.

10 mg/m³**Finland. Workplace Exposure Limits Components****Type****Value****Form**Manganese (CAS
7439-96-5)

TWA

0,2 mg/m³

Inhalable dust.

Silicon carbide (CAS
409-21-2)

TWA

0,02 mg/m³

Respirable.

0,1 fibers/cm³**France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984 Components****Type****Value****Form**Manganese (CAS
7439-96-5)

VME

1 mg/m³

Fume.

Silicon carbide (CAS
409-21-2)

VME

10 mg/m³**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG) Components****Type****Value****Form**Manganese (CAS
7439-96-5)

TWA

0,2 mg/m³

Inhalable fraction.

0,02 mg/m³

Respirable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace Components**Type****Value****Form**Manganese (CAS
7439-96-5)

AGW

0,5 mg/m³

Inhalable fraction.

Silicon carbide (CAS
409-21-2)

AGW

10 mg/m³

Inhalable fraction.

1,25 mg/m³

Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended) Components**Type****Value****Form**Silicon carbide (CAS
409-21-2)

TWA

5 mg/m³

Respirable.

10 mg/m³

Inhalable

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces Components**Type****Value**Manganese (CAS
7439-96-5)

STEL

20 mg/m³

TWA

5 mg/m³**Iceland. OELs. Regulation 154/1999 on occupational exposure limits Components****Type****Value****Form**Manganese (CAS
7439-96-5)

STEL

5 mg/m³

Total dust.

TWA

2,5 mg/m³

Total dust.

1 mg/m³

Respirable dust.

Ireland. Occupational Exposure Limits Components**Type****Value****Form**Manganese (CAS
7439-96-5)

STEL

3 mg/m³

Fume.

TWA

0,2 mg/m³

Fume.

Ireland. Occupational Exposure Limits Components

Components	Type	Value	Form
Silicon carbide (CAS 409-21-2)	TWA	0,2 mg/m3	Respirable dust.
		4 mg/m3	
		10 mg/m3	

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,1 mg/m3	Welding fume.
Silicon carbide (CAS 409-21-2)	TWA	6 mg/m3	

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	1 mg/m3	Inhalable fraction.
		0,5 mg/m3	Respirable fraction.

Norway. Administrative Norms for Contaminants in the Workplace Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TLV	1 mg/m3	Inhalable fraction.
		0,1 mg/m3	Respirable fraction.
Silicon carbide (CAS 409-21-2)	TLV	0,1 fibers/cm3	Fiber.
		0,5 mg/m3	Respirable dust.

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,2 mg/m3	Inhalable fraction.
		0,05 mg/m3	Respirable fraction.
Silicon carbide (CAS 409-21-2)	TWA	10 mg/m3	Inhalable fraction.

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,2 mg/m3	
Silicon carbide (CAS 409-21-2)	TWA	0,1 fibers/cm3	Fiber.
		3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	STEL	3 mg/m3	
	TWA	0,5 mg/m3	
Silicon carbide (CAS 409-21-2)	TWA	10 mg/m3	Inhalable fraction.

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

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,5 mg/m3	
		4 mg/m3	Inhalable fraction.
Silicon carbide (CAS 409-21-2)	TWA	1,5 mg/m3	Respirable fraction.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,5 mg/m3	Inhalable fraction.

Spain. Occupational Exposure Limits Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,2 mg/m ³	
Silicon carbide (CAS 409-21-2)	TWA	3 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.

Sweden. Occupational Exposure Limit Values Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,2 mg/m ³	Total dust.
		0,1 mg/m ³	Respirable dust.
Silicon carbide (CAS 409-21-2)	TWA	0,2 fibers/mL	

Switzerland. SUVA Grenzwerte am Arbeitsplatz Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,5 mg/m ³	Inhalable dust.
Silicon carbide (CAS 409-21-2)	TWA	3 mg/m ³	Respirable dust.
		10 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs) Components

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0,5 mg/m ³	
Silicon carbide (CAS 409-21-2)	TWA	4 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Biological limit values**Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)**

Components	Value	Determinant	Specimen	Sampling time
Manganese (CAS 7439-96-5)	20 µg/l	Mangan	Blood	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Not available.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

Eye/face protection Not available.

Skin protection

- **Hand protection** Not available.

- **Other** Not available.

Respiratory protection Not available.

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 applicable.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	1246 °C (2274,8 °F) estimated
Initial boiling point and boiling range	2061 °C (3741,8 °F) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	3610,61 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Solubility (other)	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.
Oxidizing properties	Not available.
9.2. Other information	
Density	13,10 g/cm ³ estimated
Specific gravity	13,1 estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Not available.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Not available.
10.5. Incompatible materials	Not available.
10.6. Hazardous decomposition products	Not available.

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	Not available.
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

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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, as amended

Not listed.

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

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V
Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended
Not listed.

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.

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use
Not regulated.

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.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended
Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances
Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended
Not listed.

Directive 94/33/EC on the protection of young people at work, 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.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R14 Reacts violently with water.
R52 Harmful to aquatic organisms.
H261 In contact with water releases flammable gases.

Revision information None.

Training information Not available.