



MATERIAL SAFETY DATA SHEET

MATERION

1. Chemical product and company identification

A. Product name Platinum Product

Other means of identification

SDS number G18
CAS number 7440-06-4

B. Recommended use and Limitations on use

Recommended use Scientific research and development
Other: Manufacture of medical and defense equipment Manufacture of computer, electronic and optical products, electrical equipment

Limitations on use Consumer uses: Private households (= general public = consumers)

C. Supplier information

Company name Materion Advanced Materials
Address 6070 Parkland Boulevard
Mayfield Heights OH 44124
United States

Telephone EH&S 1.216.383.4019

Email ehs@materion.com

Contact person Theodore Knudson

Emergency telephone number See Section 16.

Importer

Company name See above.

MSDS number G18

2. Hazards identification

A. Hazard category/Classification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Sensitization, respiratory Category 1
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Not classified.

B. Warning label items including precautionary statement

• Pictogram



• Signal word Danger

• Hazard statement

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.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

• Precautionary statement

Prevention

Observe good industrial hygiene practices.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264 Wash thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P284 Wear respiratory protection.

Response

Wash hands after handling.
 P302 + P352 IF ON SKIN: Wash with plenty of water.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P332 + P313 If skin irritation occurs: Get medical advice/attention.
 P337 + P313 If eye irritation persists: Get medical advice/attention.
 P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
 P362 + P364 Take off contaminated clothing and wash it before reuse.

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 related regulations).

C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard) None known.

Supplemental information For further information, please contact the Product Stewardship Department at +1.216.383.4019.

3. Composition/information on ingredients

| Chemical identity | Common and alternative names | CAS number | ID number | Content in percent (%) |
|-------------------|------------------------------|------------|-----------|------------------------|
| Platinum Product | | 7440-06-4 | KE-28808 | 100 |

4. First aid measures

A. In case of eye contact Get medical attention if irritation develops and persists.
B. In case of skin contact Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
C. In case of inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.
D. In case of swallowing Get medical advice/attention if you feel unwell.
E. Note to physician Treat symptomatically.
Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Difficulty in breathing. Skin irritation. May cause redness and pain. None known.
General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

A. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media Powder. Dry sand. Use methods for the surrounding fire.
Unsuitable extinguishing media None known.

- B. Specific hazards arising from the chemical (example: hazardous combustion products)** This product is not flammable.
- C. Specific methods of fire-fighting**
- Special protective equipment for firefighters** Wear suitable protective equipment.
 - Special fire fighting procedures** Use water spray to cool unopened containers.
- General fire hazards** No unusual fire or explosion hazards noted.
- Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

- A. Personal precautions, protective equipment and emergency measures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.
- B. Environmental precautions** Avoid discharge into drains, water courses or onto the ground. Collect spillage.
- C. Methods and materials for containment and cleaning up**
- The product is immiscible with water and will spread on the water surface.
- Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
- Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
- Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.

7. Handling and storage

- A. Precautions for safe handling** Avoid contact with eyes, skin, and clothing. Observe good industrial hygiene practices.
- B. Conditions for safe storage (including any incompatibilities)** Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure controls/personal protection

A. Exposure limit values, biological limit values, etc

Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors

| Material | Type | Value |
|----------------------------------|------|---------|
| Platinum Product (CAS 7440-06-4) | TWA | 1 mg/m3 |

US. ACGIH Threshold Limit Values

| Material | Type | Value |
|----------------------------------|------|---------|
| Platinum Product (CAS 7440-06-4) | TWA | 1 mg/m3 |

- Biological limit values** No biological exposure limits noted for the ingredient(s).
- Exposure guidelines** This material does not have established exposure limits.
- B. 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. General ventilation normally adequate. Provide eyewash station and safety shower.
- C. Personal protective equipment**
- **Respiratory protection** Not available.
 - **Eye protection** Not available.
 - **Hand protection** Wear gloves to prevent metal cuts and skin abrasions during handling.

• **Body protection** Wear appropriate chemical resistant clothing.

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.

9. Physical and chemical properties

A. Appearance

Physical state Solid.

Form Solid.

Color Grey.

B. Odor None.

C. Odor threshold Not applicable.

D. pH Not applicable.

E. Melting point/freezing point

Melting point 3215.12 °F (1768.4 °C)

Freezing point Not applicable.

F. Boiling point, initial boiling point, and boiling range 6917 °F (3825 °C)

G. Flash point Not applicable.

H. Evaporation rate Not applicable.

I. Flammability (solid, gas) None known.

J. Upper/lower limit on flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%) Not applicable.

Explosive limit - lower (%) Not applicable.

Explosive limit - upper (%) Not applicable.

K. Vapor pressure Not applicable.

L. Solubility

Solubility (water) Insoluble

M. Vapor density Not applicable.

N. Specific gravity Not applicable.

O. n-octanol/water partition coefficient Not applicable.

P. Auto-ignition temperature Not applicable.

Q. Decomposition temperature Not applicable.

R. Viscosity Not applicable.

S. Molecular weight 195.08 g/mol

Other data

Density 21.45 g/cm³ estimated

Explosive properties Not explosive.

Molecular formula Pt

Oxidizing properties Not oxidizing.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

A. Stability and hazardous reaction potential

Stability Material is stable under normal conditions.

Hazardous reaction potential No dangerous reaction known under conditions of normal use.

| | |
|--|---|
| B. Conditions to avoid (e.g. static discharge, shock or vibration, etc) | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials. |
| C. Incompatible materials | Acids. Aluminum. Chlorine. Phosphorus. |
| D. Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

A. Information on likely routes of exposure

- **Respiratory organs** May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful. Not likely, due to the form of the product.
- **Skin** Causes skin irritation. Not likely, due to the form of the product.
- **Eyes** Causes serious eye irritation. Not likely, due to the form of the product.
- **Mouth** Expected to be a low ingestion hazard.

B. Information on health hazards

- **Acute toxicity (list all possible routes of exposure)** Not known.
- **Corrosivity or irritation to the skin** Causes skin irritation. Not relevant, due to the form of the product.
- **Serious eye damage/eye irritation** Causes serious eye irritation. Not likely, due to the form of the product.
- **Respiratory sensitization** May cause allergy or asthma symptoms or breathing difficulties if inhaled. Not a respiratory sensitizer.
- **Skin sensitization** Not a skin sensitizer.
- **Carcinogenic properties /Carcinogenicity** Not classified.
- **Mutagenic properties /Mutagenicity** Not classified.
- **Reproductive toxicity** Not classified.
- **Specific target organ toxicity - single exposure** May cause respiratory irritation.
- **Specific target organ toxicity - repeated exposure** Not classified.
- **Aspiration hazard** Not an aspiration hazard.

12. Ecological information

| | |
|---|--|
| A. Ecotoxicity | Not expected to be harmful to aquatic organisms. |
| Hazardous to the aquatic environment, acute hazard | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| B. Persistence/degradability | No data is available on the degradability of this product. |
| C. Bioaccumulative potential | No data available. |
| D. Mobility in soil | The product is immiscible with water and will spread on the water surface. None known. |
| E. 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. |

13. Disposal considerations

| | |
|--|--|
| A. Method of disposal | Not available. |
| B. Disposal considerations (including disposal of contaminated containers or packaging) | Refer to manufacturer/supplier for information on recovery/recycling. |
| Waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |

14. Transport information

IATA

| | |
|---------------------------------|--|
| A. UN number | UN3200 |
| B. UN proper shipping name | Pyrophoric solid, inorganic, n.o.s. (Platinum Product) |
| C. Transport hazard class(es) | |
| Class | 4.2 |
| Subsidiary risk | - |
| D. Packing group | Not applicable. |
| E. Environmental hazards | No. |
| ERG Code | 4L |
| F. Special precautions for user | Read safety instructions, MSDS and emergency procedures before handling. |
| Other information | |
| Passenger and cargo aircraft | Forbidden |
| Cargo aircraft only | Forbidden |

IMDG

| | |
|---------------------------------|--|
| A. UN number | UN3200 |
| B. UN proper shipping name | PYROPHORIC SOLID, INORGANIC, N.O.S. (Platinum Product) |
| C. Transport hazard class(es) | |
| Class | 4.2 |
| Subsidiary risk | - |
| D. Packing group | I |
| E. Environmental hazards | |
| Marine pollutant | No. |
| EmS | F-G, S-M |
| F. Special precautions for user | Read safety instructions, MSDS and emergency procedures before handling. |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

IATA; IMDG



15. Regulatory information

A. Restrictions under the Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacturing

Not regulated.

Harmful Substances Requiring Permission for Manufacture or Use

Not regulated.

Controlled Hazardous Substances

Platinum Product (CAS 7440-06-4)

Harmful Substances Requiring Special Medical Examination

Not regulated.

Workplace Environmental Monitoring Harmful Materials

Platinum Product (CAS 7440-06-4)

Occupational Exposure Limit

Platinum Product (CAS 7440-06-4)

B. Restrictions under the Chemicals Control Law (Previously Toxic Chemicals Control Law)

Accidental Release Prevention Substances

Not regulated.

Act on the Registration and Evaluation of Chemicals

Banned Toxic Chemicals

Not regulated.

Designated Existing Chemicals Subject to Registration (PEC) (MoE No. 2015-92)

Not listed.

Restricted Chemical Substances

Not regulated.

Toxic Chemicals

Not regulated.

C. Restrictions under the Dangerous Substance Safety Management Act

D. Restrictions under the Wastes Control Act

Halogenated Materials in Waste Organic Solvents

Not regulated.

Hazardous Substances

Not regulated.

E. Restrictions under other foreign or domestic laws

Clean Air Conservation Act

Air Pollutants

Not regulated.

Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (Rules on PIC, MoE No. 2014-252, Dec. 31, 2014; Standards for Pesticides, RDA No. 2014-26), as amended

Not listed.

Specific Air Pollutants

Not regulated.

Further information

This material safety data sheet was prepared in accordance with Article 41 of the Industrial Safety and Health Law.

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|-------------------------------|-------------------------------|
| Korea | Existing Chemicals List (ECL) | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

A. Source of information

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Korea. Accidental Release Prevention Substances (Pres. Decree of Toxic Chemical Control Law, Ex. Order No. 19203, Tables 2 & 3, Dec 28, 2005)
Korea. OELs (ISHL Article 42; MOL Public Notice No. 1986-45, as amended through MOEL Notice 2013-38, August 14, 2013)
Korea. Prohibited Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 4 and 5)
Korea. Restricted Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 2 and 3)
KECI, January 27, 2015, amended through MoE 2016-138, July 13, 2016
Korea. Toxic Chemicals (AREC "K-REACH" Article 20; Designation of Toxic, Restricted or Banned Chemicals Appendix 1)
Korea. Toxic Release Inventory (TRI) Chemicals (MOE Public Notice No. 2002-166, Nov. 8, 2002)

B. Issue date

10-17-2019

C. Number of revisions and date of most recent revision

07-13-2021 (02 revision)

Further information

Transportation Emergency
Call Chemtrec at:
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402

Disclaimer

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Other information

Revised information in Section 16.