



SAFETY DATA SHEET

MATERION

1. Identification

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| Product identifier | Chromium silicon monoxide (60/40 wt%) | |
| Other means of identification | | |
| SDS number | 1GA | |
| Materion Code | 1GA | |
| CAS number | 70320-14-8 | |
| Manufacturer/Importer/Supplier/Distributor information | | |
| Manufacturer | | |
| Company name | Materion Advanced Chemicals Inc. | |
| Address | 407 N 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States | |
| Telephone | 414.212.0257 | |
| E-mail | advancedmaterials@materion.com | |
| Contact person | Noreen Atkinson | |
| Emergency phone number | Chemtrec | 800.424.9300 |

2. Hazard(s) identification

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|-----------------------|---|------------|
| Physical hazards | Not classified. | |
| Health hazards | Sensitization, respiratory | Category 1 |
| | Sensitization, skin | Category 1 |
| | Germ cell mutagenicity | Category 2 |
| | Specific target organ toxicity, single exposure | Category 2 |
| Environmental hazards | Not classified. | |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



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| Signal word | Danger |
| Hazard statement | May cause an allergic skin reaction. Causes eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing genetic defects. May cause damage to organs (H3737). Harmful to aquatic life with long lasting effects. |
| Precautionary statement | |
| Prevention | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. |

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| Response | If on skin: Wash with plenty of water. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Call a poison center/doctor. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Wash contaminated clothing before reuse. |
| Storage | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
| Disposal | Dispose of waste and residues in accordance with local authority requirements. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown acute oral toxicity. 100% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown acute dermal toxicity. For further information, please contact the Product Stewardship Department at +1.800.862.4118. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|---------|
| Chromium | | 7440-47-3 | 15 - 75 |
| Other components below reportable levels | | | 25 - 85 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

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| 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. |
| Skin contact | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. For minor skin contact, avoid spreading material on unaffected skin. |
| Eye contact | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | May cause allergic skin reaction. May cause allergic respiratory reaction. Irritation of eyes and mucous membranes. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Wear suitable protective equipment. |

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| Fire fighting equipment/instructions | Use water spray to cool unopened containers. Water runoff can cause environmental damage. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | 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 SDS. |
| Methods and materials for containment and cleaning up | Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Avoid release to the environment. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|--------------------------|------|---------|
| Chromium (CAS 7440-47-3) | PEL | 1 mg/m3 |

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|--------------------------|------|-----------|
| Chromium (CAS 7440-47-3) | TWA | 0.5 mg/m3 |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|--------------------------|------|-----------|
| Chromium (CAS 7440-47-3) | TWA | 0.5 mg/m3 |

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

| Components | Type | Value |
|--------------------------|------|-----------|
| Chromium (CAS 7440-47-3) | PEL | 0.5 mg/m3 |

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

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

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| Other | Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. |
| Respiratory protection | Wear positive pressure self-contained breathing apparatus (SCBA). |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Contaminated work clothing should not be allowed out of the workplace. |

9. Physical and chemical properties

Appearance

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| Physical state | Solid. |
| Form | Solid. |
| Color | Not available. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | 3452 °F (1900 °C) estimated |
| Initial boiling point and boiling range | 4787.6 °F (2642 °C) estimated |
| 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. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | 0.00001 hPa estimated |
| Vapor 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. |
| Other information | |
| Density | 7.14 g/cm ³ estimated |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |
| Specific gravity | 7.14 estimated |

10. Stability and reactivity

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

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| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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| Inhalation | May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful. |
| Skin contact | May cause an allergic skin reaction. |
| Eye contact | Causes eye irritation. |
| Ingestion | Based on available data, the classification criteria are not met. |

Symptoms related to the physical, chemical and toxicological characteristics Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

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| Acute toxicity | May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause allergic skin reaction. Not known. |
| Skin corrosion/irritation | Due to lack of data the classification is not possible. |
| Serious eye damage/eye irritation | Causes eye irritation. |
| Respiratory or skin sensitization | |
| Respiratory sensitization | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin sensitization | May cause an allergic skin reaction. |
| Germ cell mutagenicity | Suspected of causing genetic defects. |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

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| Reproductive toxicity | Due to lack of data the classification is not possible. |
| Specific target organ toxicity - single exposure | May cause damage to organs (). Respiratory tract irritation. |
| Specific target organ toxicity - repeated exposure | Due to lack of data the classification is not possible. |
| Aspiration hazard | Due to lack of data the classification is not possible. |
| Chronic effects | Prolonged inhalation may be harmful. |

12. Ecological information

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| Ecotoxicity | Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |
| 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

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| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | 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. |

14. Transport information

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| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |

15. Regulatory information

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| US federal regulations | All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chromium (CAS 7440-47-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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| Hazard categories | Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No |
|--------------------------|--|

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|----------------------|-------------------|-----------------|
| Chromium | 7440-47-3 | 15 - 75 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Chromium (CAS 7440-47-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Chromium (CAS 7440-47-3)

16. Other information, including date of preparation or last revision

Issue date 02-23-2018

Version # 01

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