



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier	Cadmium
Other means of identification	
SDS number	1EL
Materion Code	1EL
CAS number	7440-43-9
Synonyms	CADMIUM, ELEMENTAL * CADMIUM OR CADMIUM COMPOUNDS
Recommended use	Not available.
Recommended restrictions	None known.

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	Laura Hamilton	
Emergency phone number	Chemtrec	800.424.9300
Supplier	Not available.	

2. Hazard identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.

Label elements



Signal word	Danger
Hazard statement	Toxic if swallowed. Harmful if swallowed. Toxic if swallowed. Harmful if swallowed. May cause cancer. May cause cancer. May be harmful if swallowed. Fatal if inhaled. Suspected of causing genetic defects. May cause cancer. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs (). Causes damage to organs (respiratory system) through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. May cause long lasting harmful effects to aquatic life.
Precautionary statement	
Prevention	Keep out of reach of children. Read label before use. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Use only outdoors or in a well ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. Wear respiratory protection. Before use, obtain special instructions and learn how to work with these products safely.

Response

If medical advice is needed, have product container or label at hand. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If swallowed: Immediately call a poison center/doctor. IF SWALLOWED: Immediately call a POISON CENTER/doctor. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. IF SWALLOWED: Rinse mouth. Immediately obtain medical assistance. If inhaled: Remove person to fresh air and keep comfortable for breathing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately get medical assistance. IF exposed or concerned: Call a POISON CENTER/doctor. If exposed or concerned: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER/doctor. Immediately call a POISON CENTER or doctor/physician. Specific treatment is urgent (see this label). Rinse mouth. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of contents/container (in accordance with related regulations). Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

The Safety Information Sheet Chemicals of hazardous chemical can be obtained through phone, email or on the company website.

Supplemental information

None.

3. Composition/information on ingredients**Substances**

Chemical name	Common name and synonyms	CAS number	%
Cadmium, Elemental	CADMIUM, ELEMENTAL CADMIUM OR CADMIUM COMPOUNDS	7440-43-9	90 - 100

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments

Not applicable to consumer products. The full text for all R- and H-phrases is displayed in section 16.

4. First-aid measures**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Move to fresh air. 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. Call a physician or poison control center immediately. Call a physician if symptoms develop or persist.

Skin contact

Before washing use a dry brush to remove dust from skin. Remove and isolate contaminated clothing and shoes. Wash the skin immediately with soap and water. Call a physician or poison control center immediately. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Rinse with water. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed	Headache. Nausea, vomiting. Diarrhea. Proteinuria. Dusts may irritate the respiratory tract, skin and eyes. Coughing. Discomfort in the chest. Shortness of breath. Edema. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In case of shortness of breath, give oxygen. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Call a physician if symptoms develop or persist. 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. Keep victim under observation. Keep victim warm.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Dry sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear suitable protective equipment.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Water runoff can cause environmental damage.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep upwind. Keep out of low areas. In case of spills, beware of slippery floors and surfaces. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
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Methods and materials for containment and cleaning up

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). 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. Collect spillage. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. 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.

Environmental precautions

Avoid release to the environment. Refer to special instructions/safety data sheets. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Provide appropriate exhaust ventilation at places where dust is formed. All equipment used when handling the product must be grounded. Provide adequate ventilation. Do not breathe dust. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Do not get this material on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Use only in area provided with appropriate exhaust ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains. Use appropriate container to avoid environmental contamination. Observe good industrial hygiene practices. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities

CAUTION Keep locked up. Store locked up. The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a cool, dry place out of direct sunlight. Use appropriate container to avoid environmental contamination. Store in a closed container away from incompatible materials. Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.01 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Material	Type	Value
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.01 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Material	Type	Value	Form
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.01 mg/m ³	
		0.002 mg/m ³	Respirable.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Material	Type	Value
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.01 mg/m ³

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Material	Type	Value
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.01 mg/m ³

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Material	Type	Value
Cadmium, Elemental (CAS 7440-43-9)	TWA	0.025 mg/m ³

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Cadmium, Elemental (CAS 7440-43-9)	5 µg/g	Cadmium	Creatinine in urine	*
	5 µg/l	Cadmium	Blood	*

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

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter. Eye wash fountain is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Wear protective gloves. Wear suitable gloves. Suitable gloves can be recommended by the glove supplier. Not normally needed.

Other Wear chemical protective equipment that is specifically recommended by the manufacturer. Use of an impervious apron is recommended. It may provide little or no thermal protection. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA). Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. When using do not smoke. Do not breathe dust. Wash hands and face before breaks and immediately after handling the product. Wash hands after handling and before eating. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

9. Physical and chemical properties

Appearance	Powder.
Physical state	Solid.
Form	Powder.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	609.8 °F (321 °C)
Initial boiling point and boiling range	1409 °F (765 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable solid. 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	< 0.0000001 kPa at 25 °C
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	482 °F (250 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	8.65 g/cm ³ at 25 °C
Explosive properties	Not explosive. Not applicable.
Molecular formula	Cd
Molecular weight	112.41 g/mol
Oxidizing properties	Not oxidizing.
Specific gravity	8.65

10. Stability and reactivity

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

Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Do not mix with other chemicals.
Hazardous decomposition products	No dangerous reaction known under conditions of normal use.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Fatal if inhaled. May cause damage to organs by inhalation. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Due to lack of data the classification is not possible. Dust or powder may irritate the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye contact	Dust may irritate the eyes. Due to lack of data the classification is not possible.
Ingestion	Toxic if swallowed. Harmful if swallowed. May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Headache. Nausea, vomiting. Diarrhea. Proteinuria. Dusts may irritate the respiratory tract, skin and eyes. Coughing. Discomfort in the chest. Shortness of breath. Edema.

Information on toxicological effects

Acute toxicity Fatal if inhaled. Very toxic by inhalation. Toxic if swallowed. Toxic if swallowed. Harmful if swallowed. May be harmful if swallowed.

Product	Species	Test Results
Cadmium, Elemental (CAS 7440-43-9)		
<u>Acute</u>		
Inhalation		
LC50	Rat	0.025 mg/l, 900 Days
Oral		
LD50	Mouse	890 mg/kg
	Rat	225 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Due to lack of data the classification is not possible. Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. Due to partial or complete lack of data the classification is not possible. None known.
Respiratory or skin sensitization	
Respiratory sensitization	Due to lack of data the classification is not possible. Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Due to lack of data the classification is not possible. Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Hazardous by OSHA criteria. Hazardous by WHMIS criteria. Cancer hazard.
ACGIH Carcinogens	
Cadmium, Elemental (CAS 7440-43-9)	A2 Suspected human carcinogen.
Canada - Alberta OELs: Carcinogen category	
Cadmium, Elemental (CAS 7440-43-9)	Suspected human carcinogen.
Canada - Manitoba OELs: carcinogenicity	
Cadmium, Elemental (CAS 7440-43-9)	Suspected human carcinogen.

Canada - Quebec OELs: Carcinogen category

Cadmium, Elemental (CAS 7440-43-9)

Suspected carcinogenic effect in humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cadmium, Elemental (CAS 7440-43-9)

1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Cadmium, Elemental (CAS 7440-43-9)

Known To Be Human Carcinogen.

Reproductive toxicity

Hazardous by WHMIS criteria. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

Causes damage to organs ().

Specific target organ toxicity - repeated exposure

Causes damage to organs. Causes damage to organs () through prolonged or repeated exposure.

Aspiration hazard

Due to lack of data the classification is not possible. Due to partial or complete lack of data the classification is not possible.

Chronic effects

Hazardous by OSHA criteria. Hazardous by WHMIS criteria. Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

Further information

Reproductive toxicity. Symptoms may be delayed.

12. Ecological information**Ecotoxicity**

Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
Cadmium, Elemental (CAS 7440-43-9)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)

* Estimates for product may be based on additional component data not shown.

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**Disposal instructions**

Contract with a disposal operator licensed by the Law on Disposal and Cleaning. 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. Incinerate the material under controlled conditions in an approved incinerator. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. After recovery of solvent dispose of residue as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations. Dispose of contents/container (in accordance with related regulations). When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

D006: Waste Cadmium

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). Avoid discharge into water courses or onto the ground.

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

TDG

UN number	UN2570
UN proper shipping name	CADMIUM COMPOUND
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Packing group	III
Environmental hazards	Not available.
Special precautions for user	Not available.

IATA

UN number	UN2570
UN proper shipping name	Cadmium compound
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	6L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN2570
UN proper shipping name	CADMIUM COMPOUND
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-A
Special precautions for user	Not available.

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

IATA; IMDG; TDG



15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Cadmium, Elemental (CAS 7440-43-9)

Precursor Control Regulations

Not regulated.

International regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work. This product is not in compliance with Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronics equipment (RoHS). Regulation (EU) No 453/2010 amending Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	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

Issue date 05-15-2019

Version # 01

Further information HMIS® is a registered trade and service mark of the NPCA.

References

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
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. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
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)
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"
JIS Z 7253:2012 Hazard communication of chemicals based on GHS – Labelling and Safety Data Sheet (SDS)
GOST 30333-2007 Chemical production safety passport. General requirements.
GOST 31340-2013 Labeling of chemicals. General requirements.
GOST 32419-2013 Classification of chemical products. General requirements.
GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.
GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements.
GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination.
GOST 19433-88. Dangerous goods. Classification and marking.
GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.

Disclaimer

This safety data sheet was prepared in accordance with the Safety Data Sheet for Chemical Products (JIS Z 7250:2010).

Additional information is given in the Material Safety Data Sheet. This safety data sheet was prepared in accordance with JIS Z 7253:2012.

Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.

Revision information

Product and Company Identification: Product and Company Identification