



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier Powder G with 2-isopropyl alcohol

Other means of identification

SDS number 1TO

Materion Code 1TO

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 414.212.0290

E-mail advancedmaterials@materion.com

Contact person Laura Hamilton

Emergency phone number Chemtrec 800.424.9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards
Skin corrosion/irritation Category 1A
Serious eye damage/eye irritation Category 1
Specific target organ toxicity, single exposure Category 3 narcotic effects
Specific target organ toxicity, repeated exposure Category 1

Environmental hazards Not classified.

OSHA defined hazards Combustible dust

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Highly flammable liquid and vapor.

Precautionary statement

Prevention

Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Use explosion-proof electrical/ventilating/lighting equipment. Wear protective gloves/eye protection/face protection. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves. Use only non-sparking tools. Take precautionary measures against static discharge.

Response

Wash hands after handling. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use appropriate media for extinction. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF ON SKIN: Wash with plenty of soap and water. If eye irritation persists: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention.

Storage	Store away from incompatible materials. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of waste and residues in accordance with local authority requirements. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	100% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. 51% 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. 61% 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	%
Aluminum Oxide		1344-28-1	
Lithium hydroxide		1310-65-2	
RM Isopropyl Alcohol (2-propanol)		67-63-0	
Zirconium oxide		1314-23-4	
Other components below reportable levels			32

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Remove contaminated clothing.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Headache. Dizziness. Direct contact with eyes may cause temporary irritation. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Keep victim under observation. Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Wash contaminated clothing before reuse. Take off all contaminated clothing immediately.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Powder. Carbon dioxide (CO2). Foam.
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back.
Special protective equipment and precautions for firefighters	Not available.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS. Do not touch or walk through spilled material. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area).

Methods and materials for containment and cleaning up Dike far ahead of spill for later disposal. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Large Spills: Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Environmental precautions Not available.

7. Handling and storage

Precautions for safe handling Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. All equipment used when handling the product must be grounded. Avoid prolonged exposure. Provide adequate ventilation. When using do not smoke. Avoid contact with eyes. Avoid contact with eyes, skin, and clothing. Take precautionary measures against static discharges. Use non-sparking tools and explosion-proof equipment.

Conditions for safe storage, including any incompatibilities Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a well-ventilated place. Store in cool place. Keep in an area equipped with sprinklers. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS). Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store locked up. Store in tightly closed container.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Components	Type	Value	Form
Aluminum Oxide (CAS 1344-28-1)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)	PEL	980 mg/m ³	
		400 ppm	
Zirconium oxide (CAS 1314-23-4)	PEL	5 mg/m ³	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum Oxide (CAS 1344-28-1)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum Oxide (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)	STEL	400 ppm	
	TWA	200 ppm	
Zirconium oxide (CAS 1314-23-4)	STEL	10 mg/m3	
	TWA	5 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)	STEL	1225 mg/m3
	TWA	500 ppm 980 mg/m3
Zirconium oxide (CAS 1314-23-4)	STEL	400 ppm 10 mg/m3
	TWA	5 mg/m3

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

Components	Type	Value	Form
Aluminum Oxide (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)	PEL	980 mg/m3	
	STEL	400 ppm 1225 mg/m3	
Zirconium oxide (CAS 1314-23-4)	PEL	500 ppm 5 mg/m3	
	STEL	10 mg/m3	

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Lithium hydroxide (CAS 1310-65-2)	Ceiling	1 mg/m3

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

* - 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. Provide eyewash station. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Not available.

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Not available.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. When using do not smoke.

9. Physical and chemical properties

Appearance	Slurry
Physical state	Solid.
Form	Viscous.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-127.3 °F (-88.5 °C) estimated
Initial boiling point and boiling range	5390.6 °F (2977 °C) estimated
Flash point	53.6 °F (12.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable liquid
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	2.5 % estimated
Flammability limit - upper (%)	12 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	1035.53 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	750.2 °F (399 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.86 g/cm ³ estimated
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	0.86 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	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	Avoid temperatures exceeding the flash point. Contact with incompatible materials. Avoid temperatures exceeding the decomposition temperature. Avoid heat, sparks, open flames and other ignition sources.
Incompatible materials	Acids. Strong oxidizing agents. Isocyanates. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	No adverse effects due to skin contact are expected. Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation. Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Headache. Dizziness. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Product	Species	Test Results
Powder G with 2-isopropyl alcohol		
Acute		
Dermal		
LD50	Rabbit	32000 mg/kg
Oral		
LD50	Rat	12 g/kg
Components	Species	Test Results
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	12800 mg/kg
Oral		
LD50	Rat	4.7 g/kg

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

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation. Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified. May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity 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.

Product	Species	Test Results	
Powder G with 2-isopropyl alcohol			
Aquatic			
Fish	LC50	Fish	15475 mg/l, 96 hours
<i>Acute</i>			
Fish	LC50	Fish	3500 mg/l, 96 hours estimated
Components	Species	Test Results	
RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	> 1400 mg/l, 96 hours

* 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

Partition coefficient n-octanol / water (log Kow)

RM Isopropyl Alcohol (2-propanol) 0.05

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 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. If discarded, this product is considered a RCRA ignitable waste, D001. Incinerate the material under controlled conditions in an approved incinerator. Dispose of this material and its container to hazardous or special waste collection point. Do not incinerate sealed containers.

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. D001: Waste Flammable material with a flash point <140 F
D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

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

DOT

UN number	UN2924
UN proper shipping name	Flammable liquids, corrosive, n.o.s.(Contains isopropyl alcohol, lithium hydroxide)
Transport hazard class(es)	
Class	3
Subsidiary risk	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN2924
UN proper shipping name	Flammable liquids, corrosive, n.o.s.(Contains isopropyl alcohol, lithium hydroxide)
Transport hazard class(es)	
Class	3
Subsidiary risk	8
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN2924
UN proper shipping name	Flammable liquids, corrosive, n.o.s.(Contains isopropyl alcohol, lithium hydroxide)
Transport hazard class(es)	
Class	3
Subsidiary risk	8
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories
Combustible dust
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum Oxide	1344-28-1	
RM Isopropyl Alcohol (2-propanol)	67-63-0	

Other federal regulations

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

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0) Low priority

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

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

RM Isopropyl Alcohol (2-propanol) (CAS 67-63-0)

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

Issue date 01-09-2017
Revision date 10-07-2021
Version # 03

Disclaimer

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.

The information in the sheet was written based on the best knowledge and experience currently available.