


MATERION

SAFETY DATA SHEET

1. Identification of the product

GHS product identifier	Boron nitride aerosol spray SP-108	
Other means of identification		
SDS number	B-MSDS0083	
Recommended use of the chemical and restrictions on use		
Recommended use	Not available.	
Recommended restrictions	None known.	
Suppliers details		
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 identification

Classification of the substance or mixture

Physical hazards	Flammable aerosols	Category 2
Health hazards	Skin corrosion/irritation	Category 3
	Serious eye damage/eye irritation	Category 2A
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Specific target organ toxicity - single exposure	Category 3 narcotic effects
	Specific target organ toxicity - repeated exposure	Category 1
Environmental hazards	Hazardous to the aquatic environment — acute aquatic hazard	Category 3
	Hazardous to the aquatic environment — long-term aquatic hazard	Category 3

GHS label elements, including precautionary statements



Signal word	Danger
Hazard statement	Flammable aerosol. Causes mild skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life. Toxic 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear eye protection/face protection. Use personal protective equipment as required.

Response

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal

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

Other hazards which do not result in classification

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.

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

Chemical identity	Common name(s), synonym(s)	CAS number and other unique identifiers	Concentration
Acetone		67-64-1	30 - < 35
RM Ethanol; Ethyl Alcohol		64-17-5	20 - < 23
RM N-butane		106-97-8	10 - < 12
RM Xylene		1330-20-7	1 - < 2
Other components below reportable levels			20 - < 30

4. First-aid measures**Description of necessary first-aid measures****Inhalation**

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

Wash off with soap and water. Get medical attention if irritation develops and persists.

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

In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Mild skin irritation. Prolonged exposure may cause chronic effects.

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). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures**Suitable extinguishing media**

Powder. Alcohol resistant foam. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective actions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Inform appropriate managerial or supervisory personnel of all environmental releases.

Methods and materials for containment and cleaning up Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. 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. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions to ensure safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe mist or vapor. 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. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Level 2 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits**Mexico. Occupational Exposure Limit Values**

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	3000 mg/m ³ 1260 ppm
	TWA	2400 mg/m ³ 1000 ppm
RM Ethanol; Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m ³ 1000 ppm
	TWA	1900 mg/m ³
RM Xylene (CAS 1330-20-7)	STEL	800 ppm 655 mg/m ³
	TWA	150 ppm 435 mg/m ³ 100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
RM Ethanol; Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm
	STEL	1000 ppm
RM Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
RM Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

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

Mexico. Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetona	Urine	*
RM Xylene (CAS 1330-20-7)	1.5 g/g	Ácido metilhipúricos	Creatinine in urine	*

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

Control banding approach

Not available.

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.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other	Use of an impervious apron is recommended.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke. 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

Appearance

Physical state	Liquid.
Form	Aerosol.
Color	Not available.
Odor	Not applicable.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-305.68 °F (-187.6 °C) estimated
Initial boiling point and boiling range	-43.78 °F (-42.1 °C) estimated
Flash point	-156.0 °F (-104.4 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	1.9 % estimated
Flammability limit - upper (%)	12.8 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	1600.9 hPa estimated
Vapor density	Not available.
Relative density	Not available.

Solubility(ies)

Solubility (water)	Not available.
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Partition coefficient (n-octanol/water)	Not available.
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Auto-ignition temperature	550 °F (287.78 °C) estimated
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Decomposition temperature	Not available.
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Viscosity	Not available.
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Other information

Density	0.74 g/cm ³ estimated
Explosive properties	Not explosive.
Heat of combustion (NFPA 30B)	26.54 kJ/g estimated
Oxidizing properties	Not oxidizing.
Percent volatile	60 % estimated
Specific gravity	0.74 estimated
VOC (Weight %)	61.08 % 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.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong acids. Acids. Strong oxidizing agents. Nitrates. Halogens. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes mild skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Mild skin irritation.

Information on toxicological effects

Acute toxicity Narcotic effects.

Product	Species	Test Results
Boron nitride aerosol spray SP-108		
<u>Acute</u>		
Dermal		
LD50	Rabbit	56923 mg/kg estimated 57 ml/kg estimated
Inhalation		
LC50	Mouse	5718 mg/l, 2 Hours estimated 168 mg/l, 4 Hours estimated
	Rat	86047 ppm, 10 Hours estimated 11606 mg/l, 15 Minutes estimated 5456 mg/l, 4 Hours estimated 143 mg/l, 8 Hours estimated
Oral		
LD50	Dog	24 g/kg estimated
	Guinea pig	24 g/kg estimated
	Mouse	5136 mg/kg estimated
	Rabbit	15198 mg/kg estimated
	Rat	15342 mg/kg estimated
Components	Species	Test Results
Acetone (CAS 67-64-1)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	20000 mg/kg 20 ml/kg

Components	Species	Test Results
Inhalation		
LC50	Rat	76 mg/l, 4 Hours 50.1 mg/l, 8 Hours
Oral		
LD50	Mouse	3000 mg/kg
	Rabbit	5340 mg/kg
	Rat	5800 mg/kg
RM Ethanol; Ethyl Alcohol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Mouse	39 mg/l, 4 Hours
	Rat	20000 ppm, 10 Hours
Oral		
LD50	Dog	5.5 g/kg
	Guinea pig	5.6 g/kg
	Mouse	3450 mg/kg
	Rat	6.2 g/kg
RM N-butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
RM Xylene (CAS 1330-20-7)		
Acute		
Dermal		
LD50	Rabbit	> 43 g/kg
Inhalation		
LC50	Mouse	3907 mg/l, 6 Hours
	Rat	6350 mg/l, 4 Hours
Oral		
LD50	Mouse	1590 mg/kg
	Rat	3523 - 8600 mg/kg

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

Skin corrosion/irritation	Causes mild skin irritation.
Serious eye damage/eye 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	May cause genetic defects.
Carcinogenicity	May cause cancer.

ACGIH Carcinogens

Acetone (CAS 67-64-1)	A4 Not classifiable as a human carcinogen.
RM Xylene (CAS 1330-20-7)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

RM Xylene (CAS 1330-20-7)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Other information	Not available.

12. Ecological information**Ecotoxicity** Toxic to aquatic life with long lasting effects.

Product	Species		Test Results
Boron nitride aerosol spray SP-108			
Aquatic			
Crustacea	EC50	Daphnia	17633.4258 mg/l, 48 hours estimated
Fish	LC50	Fish	2401.0383 mg/l, 96 hours estimated
Components	Species		Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	10294 - 17704 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
RM Ethanol; Ethyl Alcohol (CAS 64-17-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
RM Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	7.711 - 9.591 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)**

Acetone	-0.24
RM Ethanol; Ethyl Alcohol	-0.31
RM N-butane	2.89
RM Xylene	3.12 - 3.2

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 methods

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. 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. Do not re-use empty containers.

14. Transport information

SCT

UN number	UN1011
UN proper shipping name	BUTANE
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT

UN number	UN1011
UN proper shipping name	Butane see also Petroleum gases, liquefied
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	19, T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

ADR

UN number	UN1011
UN proper shipping name	BUTANE
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Hazard No. (ADR)	23
Tunnel restriction code	B/D
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

UN number	UN1011
UN proper shipping name	BUTANE

Transport hazard class(es)

Class 2.1

Subsidiary risk -

Label(s) 2.1 (+13)

Packing group Not applicable.

Environmental hazards No.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

UN number UN1011

UN proper shipping name Butane

Transport hazard class(es)

Class 2.1

Subsidiary risk -

Label(s) 2.1

Packing group Not applicable.

Environmental hazards No.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN1011

UN proper shipping name Butane

Transport hazard class(es)

Class 2.1

Subsidiary risk -

Packing group Not applicable.

Environmental hazards No.

ERG Code 10L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Forbidden

Cargo aircraft only Allowed.

IMDG

UN number UN1011

UN proper shipping name BUTANE

Transport hazard class(es)

Class 2.1

Subsidiary risk -

Packing group Not applicable.

Environmental hazards

Marine pollutant No.

EmS F-D, S-U

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Not established.

Annex II of MARPOL 73/78 and
the IBC Code

ADN; ADR; IATA; IMDG; RID; SCT



DOT



15. Regulatory information

Safety, health and environmental regulations specific for the product in question

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

Mexico. Hazard identification guidance list (NOM-018-STPS)

ACETONA (DIMETIL CETONA; 2-PROPANONA) (CAS 67-64-1)	Listed.
ALCOHOL ETILICO (ETANOL, ALCOHOL DESNATURALIZADO) (CAS 64-17-5)	Listed.
BUTANO (N-BUTANO; ETIL METIL METANO) (CAS 106-97-8)	Listed.
XILENO (O-, M-, P- ISÓMEROS, MEZCLADOS) (DIMETILBENCENO) (CAS 1330-20-7)	Listed.

Mexico. Substances subject to reporting for the pollutant release and transfer registry (PRTR)

Not listed.

International regulations

Montreal Protocol

Not applicable.

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto 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

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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

List of abbreviations

Not available.

Disclaimer

Materion - Milwaukee 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.

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