



Safety Data Sheet

according to WHMIS 2023 and HCS 2024

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Date of issue 12/10/2025

Version number 5.00

Revision: 11/05/2025

1 Identification

Product identifier

Trade name: 4223F

Other Means of Identification: Premium Polyurethane Conformal Coating (Aerosol)

Related Part Number: 4223F-Aerosol, 4223F-312G

Application of the substance / the mixture Protective coating for printed circuit boards

Uses advised against Not available

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

MG Chemicals (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 800-340-0772
+(1) 905-331-1396
info@mgchemicals.com

Distributor:

Masline
511 Clinton Ave S
Rochester, New York 14620
United States
+(1) 586-546-5373

Information department: sds@mgchemicals.com

Emergency telephone number:

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA-Call 3E at +1-866-519-4752 or +1-760-476-3962 (Service access code: 335388)

For emergencies involving the transport of dangerous goods; 24/7 service
CANADA-Call CANUTEC collect at +1-613-996-6666 or *666 on cellular phones

2 Hazard identification

Classification of the substance or mixture

Aerosols, Section 2.3.1 – Category 2

H223 Flammable aerosol.

H229 Pressurized container: may burst if heated.

Skin Irritation - Category 2

H315 Causes skin irritation.

Sensitization - skin – Category 1

H317 May cause an allergic skin reaction.

Specific target organ toxicity (single exposure) – Category 3

H336 May cause drowsiness or dizziness.

Aquatic Acute 1

H400 Very toxic to aquatic life.

Aquatic Chronic 1

H410 Very toxic to aquatic life with long lasting effects.

Label elements

GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

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· Hazard pictograms



GHS02 GHS07 GHS09

· Signal word Warning

· Hazard-determining components of labeling:

heptane
Distillates (petroleum), hydrotreated light
Butan-2-one
tris(nonylphenyl) phosphite

· Hazard statements

H223 Flammable aerosol.
H229 Pressurized container: may burst if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P261 Avoid breathing mist, vapors or spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing, and eye protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C (122 °F).
P501 Dispose of contents and container in accordance with local, regional, and national regulations.

· Other hazards Warning! May displace oxygen and cause rapid suffocation.

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* 3 Composition/Information on ingredients

· Chemical characterization: Mixtures

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:		
142-82-5	heptane	27% w/w
74-98-6	propane	20% w/w
8052-41-3	Stoddard solvent	20% w/w
75-28-5	isobutane	11% w/w
78-93-3	Butan-2-one	4% w/w
26523-78-4	tris(nonylphenyl) phosphite	<0.1% w/w

* 4 First-aid measures

· Description of first aid measures

· After inhalation:

Remove person to fresh air and keep comfortable for breathing.

If feeling unwell: Call a POISON CENTRE or doctor.

· After skin contact:

Wash with plenty water.

If skin irritation or rash occurs: Get medical advice or attention.

Take off contaminated clothing and wash it before reuse.

· After eye contact:

If symptoms persist consult doctor.

Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· After swallowing:

Rinse mouth.

Do NOT induce vomiting.

If symptoms persist consult doctor.

· Information for doctor: Treat symptomatically

· Most important symptoms and effects, both acute and delayed

See section 11 for additional information.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* 5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use water spray to cool containers.

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- **Special hazards arising from the substance or mixture**
Prevent fire-fighting wash from entering waterway or sewer system.
Aerosols containers may erupt with force at temperatures above 50 °C [122 °F].
 - **Hazardous combustion products:** Carbon Oxides (COx)
- **Advice for firefighters**
 - **Protective equipment:** Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Remove or keep away all sources of extreme heat or open flames.
Avoid breathing mist, spray, or vapors.
- **Environmental precautions:**
Avoid release to the environment.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
RECOMMENDATION: Use a grounded stainless steel or carbon steel container.
Not applicable
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Wear protective gloves and eye protection.
Wash hands and exposed skin thoroughly after handling.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Contaminated work clothing should not be allowed out of the workplace.
Avoid breathing mist, spray, or vapors.
Use only outdoors or in a well-ventilated area.
Do not pierce or burn, even after use.
 - **Information about protection against explosions and fires:**
Do not spray on a naked flame or any incandescent material.
Keep ignition sources away - Do not smoke.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

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· Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Observe official regulations on storing packagings with pressurized containers.
Keep in a dry and clean area, away from incompatible substances
Store in a well-ventilated place. Keep cool.

· Information about storage in one common storage facility: Not required

· Further information about storage conditions:

Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
Do not expose to temperatures exceeding 50 °C [122 °F].
Store locked up.

· Specific end use(s) See section 1.2

8 Exposure controls/ Personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

142-82-5 heptane	
EL (Canada)	STEL: 500 ppm TWA: 400 ppm
EV (Canada)	STEL: 2.045 mg/m ³ , 500 ppm TWA: 1.635 mg/m ³ , 400 ppm
PEL (USA)	TWA: 2000 mg/m ³ , 500 ppm
REL (USA)	TWA: 350 mg/m ³ , 85 ppm Ceiling: 1800* mg/m ³ , 440* ppm *15-min
TLV (USA)	STEL: 400 ppm TWA: 200 ppm OTO
74-98-6 propane	
EL (Canada)	Simple asphyxiant; EX
EV (Canada)	TWA: 1,000 ppm revoked as of 01/01/18
PEL (USA)	TWA: 1800 mg/m ³ , 1000 ppm
REL (USA)	TWA: 1800 mg/m ³ , 1000 ppm
TLV (USA)	see Appendix F Minimal oxygen content (D, EX)
8052-41-3 Stoddard solvent	
EL (Canada)	STEL: 580 mg/m ³ TWA: 290 mg/m ³
PEL (USA)	TWA: 2900 mg/m ³ , 500 ppm
REL (USA)	TWA: 350 mg/m ³ Ceiling: 1800* mg/m ³ *15-min

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TLV (USA)	TWA: 525 mg/m ³ , 100 ppm
75-28-5 isobutane	
EL (Canada)	STEL: 1000 ppm EX
EV (Canada)	TWA: 800 ppm revoked as of 01/01/18
TLV (USA)	STEL: 2370 mg/m ³ , 1000 ppm (EX)
78-93-3 Butan-2-one	
EL (Canada)	STEL: 100 ppm TWA: 50 ppm R, Skin
EV (Canada)	STEL: 885 mg/m ³ , 300 ppm TWA: 590 mg/m ³ , 200 ppm
PEL (USA)	TWA: 590 mg/m ³ , 200 ppm
REL (USA)	STEL: 885 mg/m ³ , 300 ppm TWA: 590 mg/m ³ , 200 ppm
TLV (USA)	STEL: 150 ppm TWA: 75 ppm BEI, Skin
Ingredients with biological limit values:	
78-93-3 Butan-2-one	
BEI (USA)	2 mg/L Medium: urine Time: end of shift Parameter: Methyl ethyl ketone (nonspecific)

Additional information:

The lists that were valid during the creation were used as basis.
Refer to the national or regional occupational exposure limit regulation for abbreviations and acronyms.

Exposure controls

Appropriate engineering controls Keep airborne concentrations below exposure limits.

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.

Breathing equipment:

Advice should be sought from respiratory protection specialists.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

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· **Protection of hands:**

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.



Protective gloves: EN374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses or tightly sealed goggles: EN 166

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· Physical state	Aerosol
· Form:	Viscous
· Color:	Clear
· Odor:	Mild
· Odor threshold:	Not determined
· Melting point/Melting range:	Undetermined
· Boiling point/Boiling range:	80 °C (176 °F)
· Flammability:	Flammable.
· Explosion limits:	
· Lower:	2 Vol %
· Upper:	9 Vol %
· Flash point:	-3 °C (26.6 °F)
· Auto igniting:	223 °C (433.4 °F)
· Decomposition temperature:	Not determined
· pH-value:	Not determined
· Viscosity:	
· Kinematic:	Not determined
· Dynamic:	Not determined

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<ul style="list-style-type: none"> · Solubility in / Miscibility with <ul style="list-style-type: none"> · Water: · Partition coefficient (n-octanol/water): · Vapor pressure at 20 °C (68 °F): · Relative density at 25 °C (77 °F): · Bulk density: · Vapor density (air=1): · Particle characteristics 	<p>Partly miscible.</p> <p>Not determined</p> <p>8,300 hPa (6.200 mm Hg)</p> <p>0.80</p> <p>581 kg/m³</p> <p>Not determined</p> <p>Not applicable</p>
<ul style="list-style-type: none"> · Other information <ul style="list-style-type: none"> · Important information on protection of health and environment, and on safety. <ul style="list-style-type: none"> · Ignition temperature: · Danger of explosion: · Organic solvents: · VOC content: · Solids content: · Evaporation rate 	<p>Product is not selfigniting.</p> <p>Product is not explosive. However, formation of explosive air/vapor mixtures are possible.</p> <p>51.00 %</p> <p>62.000 %</p> <p>496.0 g/l / 4.14 lb/gal</p> <p>18.0 %</p> <p>Not applicable.</p>

* 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Chemically stable at normal temperatures and pressures.
 - **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Temperatures above 50 °C, open flames, and incompatible substances
- **Incompatible materials:**

Oxidizing agents

Strong acids
- **Hazardous decomposition products:**

No dangerous decomposition products known.

Hazardous combustion products: see section 5.

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* 11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:		
142-82-5 heptane		
Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	2,000 mg/kg (rabbit)
74-98-6 propane		
Inhalative	LC50/4 h	>800,000 ppm (rat)
75-28-5 isobutane		
Inhalative	LC50/4 h	>800,000 ppm (rat)
78-93-3 Butan-2-one		
Oral	LD50	2,737 mg/kg (rat)
Dermal	LD50	6,480 mg/kg (rabbit)
Inhalative	LC50/ 8 h	23,500 mg/m3 (rat)

· Primary irritant effect:

· on the skin: Irritant to skin and mucous membranes.

· Sensitization:

Sensitization possible through skin contact.

May cause an allergic skin reaction.

· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

· **Carcinogenicity** Based on available data, the classification criteria are not met.

· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.

· **Specific target organ toxicity - repeated exposure**

Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

· Summary of effects and symptoms by route of exposure

· **Eyes:** redness, serious irritation

· **Skin:**

rash, allergic contact dermatitis

redness, irritation

· **Inhalation:**

may cause mild respiratory irritation

headache

Extreme exposure may cause unconsciousness.

dizziness or drowsiness

· **Swallowed:**

abdominal pain

nausea, vomiting

see inhalation symptoms

· Delayed and immediate effects as well as chronic effects from short and long-term exposure

Prolonged or repeated exposure may cause skin allergies.

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· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.
· NTP (National Toxicology Program)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

Very toxic to aquatic life with long lasting effect.
Avoid release to the environment.
Collect spillage.

· **Persistence and degradability** No further relevant information available.

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable
- **vPvB:** Not applicable

· **Other adverse effects**

· **Remark:** Very toxic for fish

* 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:** This material and its container must be disposed of as hazardous waste.

· **Uncleaned packagings:**

· **Recommendation:**

Containers may still present a chemical hazard/ danger when empty.
Dispose of contents in accordance with all local, regional, national, and international regulations.
Where possible retain label warnings and SDS and observe all notices pertaining to the product.

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14 Transport information

<ul style="list-style-type: none"> UN-Number DOT/TDG, IMDG, IATA 	UN1950
<ul style="list-style-type: none"> UN proper shipping name DOT/TDG, IATA IMDG 	Aerosols, flammable AEROSOLS
<ul style="list-style-type: none"> Transport hazard class(es) DOT/TDG (Transport dangerous goods): <div>   </div> <ul style="list-style-type: none"> Class Label 	2.1 Gases 2.1
<ul style="list-style-type: none"> IMDG, IATA <div>  </div> <ul style="list-style-type: none"> Class Label 	2.1 Gases 2.1
<ul style="list-style-type: none"> Packing group DOT/TDG, IMDG, IATA 	Not applicable
<ul style="list-style-type: none"> Environmental hazards: Marine pollutant: Special marking (IATA): 	Product contains environmentally hazardous substances: heptane MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS
<ul style="list-style-type: none"> Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable
<ul style="list-style-type: none"> Transport/Additional information: <div>  Limited Quantity </div> <ul style="list-style-type: none"> DOT/TDG Quantity limitations Remarks: 	On passenger aircraft/rail: 75 kg On cargo aircraft only: 150 kg Special marking with the symbol (fish and tree).

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· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· Special precautions for user	
Not applicable	
· Hazard identification number (Kemler code):	-
· EMS Number:	F-D,S-U
· Stowage Code	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
· Segregation Code	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
· UN "Model Regulation":	UN 1950 AEROSOLS, 2.1

* 15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· OSHA Hazard Communication Standard (29 CFR Part 1900)

The safety data sheet and label comply with HCS 2024.

· Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2023.

· Sara

· Section 355 (extremely hazardous substances):		
None of the ingredients is listed.		
· Section 313 (Specific toxic chemical listings):		
None of the ingredients is listed.		
· TSCA (Toxic Substances Control Act):		
142-82-5	heptane	ACTIVE
74-98-6	propane	ACTIVE
75-28-5	isobutane	ACTIVE
78-93-3	Butan-2-one	ACTIVE

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26523-78-4	tris(nonylphenyl) phosphite	ACTIVE
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· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Non-Domestic Substances List (NDSL)**

None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

142-82-5	heptane
8052-41-3	Stoddard solvent
78-93-3	Butan-2-one

· **HMIS-ratings (scale 0 - 4)**

Health = * 2

Fire = 3

Reactivity = 0

· **Europe**

· **RoHS (Restriction of Hazardous Substances Directive)**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP and complies with European RoHS regulations.

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· **WEEE (Waste Electrical and Electronic Equipment Directive)**

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

· **Per- and polyfluoroalkyl substances (PFAS)**

None of the ingredients is listed.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Regulatory department

· **Contact:** sds@mgchemicals.com

· **Version number of previous version:** 4.00

· **Date of preparation** 12/10/2025

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

· *** Data compared to the previous version altered.**

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