Safety Data Sheet

according to WHMIS 2023 and HCS 2024

Date of issue 11/04/2025 Version number 4.02 Revision: 11/04/2025

1 Identification

· **Product identifier**

· **Trade name: 419D–P-GR**

· **Other Means of Identification:** Overcoat Pen-Green

· **Related Part Number:** 419D–P-GR

· **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

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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**

Flammable liquids – Category 2	H225 Highly flammable liquid and vapour.
Eye damage/irritation – Category 2A	H319 Causes serious eye 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.

· **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

· **Signal word** Danger

· **Hazard-determining components of labeling:**
n-butyl acetate
Butan-2-one
methyl methacrylate
titanium dioxide
Carbon black

· **Hazard statements**
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.

· **Precautionary statements**

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P261	Avoid breathing vapors.
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.
P280	Wear protective gloves / eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice.
P337+P313	If eye irritation persists: Get medical advice.
P370+P378	In case of fire: Use CO2, powder or water spray to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents and container in accordance with local, regional, and national regulations.

· **Other hazards** Repeated exposure may cause skin dryness or cracking.

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3 Composition/Information on ingredients

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

· **Dangerous components:**		
123-86-4	n-butyl acetate	53.0% w/w
78-93-3	Butan-2-one	12.0% w/w
108-65-6	2-methoxy-1-methylethyl acetate	5.0% w/w
1333-86-4	Carbon black	1.0% w/w
8052-41-3	Stoddard solvent	1.0% w/w
13463-67-7	titanium dioxide	0.2% w/w
80-62-6	methyl methacrylate	0.1% w/w
97-88-1	n-butyl methacrylate	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:**
Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice or attention.
· **After swallowing:**
Rinse mouth.
Do NOT induce vomiting.
If symptoms persist consult doctor.

· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.

· **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.

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· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture**
Vapors are heavier than air. Vapors may travel to sources of ignition near the ground. They can cause flash fire or ignite explosively.
Prevent fire-fighting wash from entering waterway or sewer system.
The liquid may float on water and ignite.

· **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:** 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).
Collect liquid in a sealable, chemical-resistant container.
Wash residue with a paper towel and place dirty towels in container.
Use soap and water to remove the last traces of residue.

· **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**
Wear protective gloves and eye protection.
Wash hands and exposed skin thoroughly after handling.
Take off contaminated clothing and wash it before reuse.
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.

· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.

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· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Keep in a dry and clean area, away from incompatible substances
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
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:**	
123-86-4 n-butyl acetate	
EL (Canada)	STEL: 150 ppm TWA: 50 ppm
EV (Canada)	STEL: 950 mg/m³, 200 ppm TWA: 710 mg/m³, 150 ppm
PEL (USA)	TWA: 710 mg/m³, 150 ppm
REL (USA)	STEL: 950 mg/m³, 200 ppm TWA: 710 mg/m³, 150 ppm
TLV (USA)	STEL: 712 mg/m³, 150 ppm TWA: 238 mg/m³, 50 ppm
78-93-3 Butan-2-one	
EL (Canada)	STEL: 100 ppm TWA: 50 ppm R, Skin
EV (Canada)	STEL: 885 mg/m³, 300 ppm TWA: 590 mg/m³, 200 ppm
PEL (USA)	TWA: 590 mg/m³, 200 ppm
REL (USA)	STEL: 885 mg/m³, 300 ppm TWA: 590 mg/m³, 200 ppm
TLV (USA)	STEL: 150 ppm TWA: 75 ppm BEI, Skin
108-65-6 2-methoxy-1-methylethyl acetate	
EL (Canada)	STEL: 75 ppm TWA: 50 ppm
EV (Canada)	TWA: 270 mg/m³, 50 ppm

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WEEL (USA)	TWA: 50 ppm
1333-86-4 Carbon black	
EL (Canada)	TWA: 3 mg/m³ IARC 2B
EV (Canada)	TWA: 3.5 mg/m³
PEL (USA)	TWA: 3.5 mg/m³
REL (USA)	TWA: 3.5* mg/m³ *0.1 in presence of PAHs;See Pocket Guide Apps.A+C
TLV (USA)	TWA: 3* mg/m³ *inhalable fraction, A3
8052-41-3 Stoddard solvent	
EL (Canada)	STEL: 580 mg/m³ TWA: 290 mg/m³
EV (Canada)	TWA: 525 mg/m³
PEL (USA)	TWA: 2900 mg/m³, 500 ppm
REL (USA)	TWA: 350 mg/m³ Ceiling: 1800* mg/m³ *15-min
TLV (USA)	TWA: 525 mg/m³, 100 ppm
80-62-6 methyl methacrylate	
EL (Canada)	STEL: 100 ppm TWA: 50 ppm S(D)
EV (Canada)	STEL: 100 ppm TWA: 50 ppm
PEL (USA)	TWA: 410 mg/m³, 100 ppm
REL (USA)	TWA: 410 mg/m³, 100 ppm
TLV (USA)	STEL: 410 mg/m³, 100 ppm TWA: 205 mg/m³, 50 ppm DSEN, A4
97-88-1 n-butyl methacrylate	
EL (Canada)	TWA: 50 ppm IARC 2B

· **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** No further data; see section 7.

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· **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.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
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.
Advice should be sought from respiratory protection specialists.
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.
· **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**	Liquid
· **Form:**	Viscous
· **Color:**	Green
· **Odor:**	Fruit-like
· **Odor threshold:**	Not determined.
· **Melting point/Melting range:**	Undetermined.

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· **Boiling point/Boiling range:**	80 °C (176 °F)
· **Flammability:**	Highly flammable.
· **Explosion limits:**	
· **Lower:**	1.8 Vol %
· **Upper:**	9 Vol %
· **Flash point:**	-3 °C (26.6 °F)
· **Auto igniting:**	315 °C (599 °F)
· **Decomposition temperature:**	Not determined.
· **pH-value:**	Not determined.
· **Viscosity:**	
· **Dynamic:**	Not determined.
· **Solubility in / Miscibility with**	
· **Water:**	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	105 hPa (78.8 mm Hg)
· **Relative density at 25 °C (77 °F):**	0.93
· **Vapor density (air=1):**	>2.5
· **Particle characteristics**	Not applicable

· **Other information**

· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Organic solvents:**	70.00 %
· **VOC content:**	70,000 % 700.0 g/l / 5.84 lb/gal
· **Solids content:**	28.8 %
· **Evaporation rate**	<1 (ButAc=1)

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** Avoid open flames, excessive heat, sparks, ignition sources, and incompatible substances.

· **Incompatible materials:**
Strong oxidizing agents
Strong acids

· **Hazardous decomposition products:**
No dangerous decomposition products known.

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Hazardous combustion products: see section 5.

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
123-86-4 n-butyl acetate		
Oral	LD50	>10,768 mg/kg (rat)
Dermal	LD50	>17,600 mg/kg (rabbit)
Inhalative	LC50/4 h	>21 mg/L (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)
108-65-6 2-methoxy-1-methylethyl acetate		
Oral	LD50	8,532 mg/kg (rat)
Dermal	LD/50	5 g/kg (rabbit)
Inhalative	LC50/4 h	35.7 mg/L (rat)
1333-86-4 Carbon black		
Oral	LD50	>15,400 mg/kg (rat)
Dermal	LD50	>3,000 mg/kg (rabbit)
13463-67-7 titanium dioxide		
Oral	LD50	>20,000 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>6.82 mg/L (rat)
80-62-6 methyl methacrylate		
Oral	LD50	7,872 mg/kg (rat)
97-88-1 n-butyl methacrylate		
Oral	LD50	22,600 mg/kg (rat)
Dermal	LD50	11,300 mg/kg (rabbit)
Inhalative	LC50/4 h	4,910 mg/L (rat)

· **Primary irritant effect:**

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **Summary of effects and symptoms by route of exposure**

· **Eyes:**
pain
redness, serious irritation

· **Skin:**
rash, allergic contact dermatitis

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dry skin
redness
· **Inhalation:**
dizziness or drowsiness
cough
headache
nausea
· **Swallowed:**
nausea
sore throat
diarrhea
vomiting

· **Delayed and immediate effects as well as chronic effects from short and long-term exposure**
Prolonged or repeated exposure may defat skin and cause skin dryness and cracking, and local redness and discomfort.
Prolonged or repeated exposure may cause skin allergies.

· **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)**		
1333-86-4	Carbon black	2B
13463-67-7	titanium dioxide	2B
80-62-6	methyl methacrylate	3
97-88-1	n-butyl methacrylate	2B

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
123-86-4 n-butyl acetate	
LC50 96h	18 mg/L (minnow)
1333-86-4 Carbon black	
EC50/ 24 h	>5,600 mg/L (aquatic invertebrates)
EC50/ 72 h	>10,000 mg/L (aquatic algae and cyanobacteria)
EC0/ 3 h	>800 mg/L (microorganisms)
LC50	>1,000 mg/L (fish)

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

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· **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** No further relevant information available.

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.

14 Transport information

· **UN-Number**	
· **DOT/TDG, IMDG, IATA**	UN1263
· **UN proper shipping name**	
· **DOT/TDG, IATA**	Paint
· **IMDG**	PAINT
· **Transport hazard class(es)**	
· **DOT/TDG (Transport dangerous goods):**	

· **Class**	3 Flammable liquids
· **Label**	3

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· **IMDG, IATA**

· **Class**	3 Flammable liquids
· **Label**	3
· **Packing group**	
· **DOT/TDG, IMDG, IATA**	II
· **Environmental hazards:**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

· **Transport/Additional information:**

Excepted Quantity

· **DOT/TDG**

· **Quantity limitations**	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L

· **IMDG**

· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Special precautions for user**	Not applicable.
· **Hazard identification number (Kemler code):**	33
· **EMS Number:**	F-E,S-E
· **Stowage Category**	B
· **UN "Model Regulation":**	UN 1263 PAINT, 3, II

* 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.

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· **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):**	
80-62-6	methyl methacrylate

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**	
80-62-6	methyl methacrylate

· **Proposition 65**

· **Chemicals known to cause cancer:**	
1333-86-4	Carbon black
13463-67-7	titanium dioxide

· **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)**		
1333-86-4	Carbon black	A4
13463-67-7	titanium dioxide	A4
80-62-6	methyl methacrylate	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
1333-86-4	Carbon black
13463-67-7	titanium dioxide

· **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%)**	
123-86-4	n-butyl acetate

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78-93-3	Butan-2-one
1333-86-4	Carbon black
8052-41-3	Stoddard solvent

· **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.

· **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:** 4.01
· **Date of preparation** 11/04/2025
· **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.**