**according to Regulation (EC) No 1907/2006, Article 31**

Printing date 27.03.2024 Version number 4 (replaces version 3) Revision: 26.01.2024

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## 1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: 419D**
· **Other Means of Identification:** Acrylic Conformal Coating (Aerosol)

· **Related Part Number:** 419D-Aerosol, 419D-340G
· **UFI:** 34A0-M030-D00G-FE71
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** Protective coating for printed circuit boards.

· **1.3 Details of the supplier of the safety data sheet** M.G. Chemicals Ltd.
· **Manufacturer/Supplier:**

MG Chemicals Ltd. (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 800-340-0772

MG Chemicals
Heame House, 23 Bliston Street
Sedgely Dudley DY3 1JA.
UNITED KINGDOM
+(44) 1663 362888 sales@mgchemicals.com

MG Chemicalst Ltd.
Level 2, Vision Exchange, Building Territorials Street,
Zone 1, Central Business, District,
Birkirkara CBD 1070,
MALTA

· **Further information obtainable from:** sds@mgchemicals.com
· **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111
Verisk 3E (Access code: 335388), +(44) 20 3514787
Other emergency telephone numbers: +(0) 800 680 0425

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA-Call Verisk 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



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**Trade name: 419D**

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## 2 Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

GHS02 flame

Aerosol 2 H223-H229 Flammable aerosol. Pressurised container: May burst if heated.

GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H336 May cause drowsiness or dizziness.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**

n-butyl acetate
methyl methacrylate
n-butyl methacrylate

· **Hazard statements**

H223-H229 Flammable aerosol. Pressurised container: May burst if heated.
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.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P280 Wear protective gloves, protective clothing, and eye protection.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

EUH066 Repeated exposure may cause skin dryness or cracking.
EUH208: Contains methyl methacrylate, n-butyl methacrylate. May produce an allergic reaction.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

(Contd. on page 3)

(Contd. of page 2)

· **Determination of endocrine-disrupting properties**

78-93-3 butanone: List II

## 3 Composition/information on ingredients

· **3.2 Mixtures**

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

· **Dangerous components:**

| | | |
|---|---|---|
| CAS: 115-10-6<br>EINECS: 204-065-8 | dimethyl ether<br>Flam. Gas 1A, H220; Press. Gas (Comp.), H280 | 40.0% |
| CAS: 123-86-4<br>EINECS: 204-658-1 | n-butyl acetate<br>Flam. Liq. 3, H226; STOT SE 3, H336, EUH066 | 35.0% |
| CAS: 78-93-3<br>EINECS: 201-159-0 | butanone<br>Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066 | 7.0% |
| CAS: 108-65-6<br>EINECS: 203-603-9 | 2-methoxy-1-methylethyl acetate<br>Flam. Liq. 3, H226 | 4.0% |
| CAS: 80-62-6<br>EINECS: 201-297-1 | methyl methacrylate<br>Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335 | 0.1% |
| CAS: 97-88-1<br>EINECS: 202-615-1 | n-butyl methacrylate<br>Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 | 0.1% |

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

## 4 First aid measures

· **4.1 Description of first aid measures**

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

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

· **5.2 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.

(Contd. on page 4)

(Contd. of page 3)

· ***5.3 Advice for firefighters***
· ***Protective equipment:*** *No special measures required.*

## *6 Accidental release measures*

· ***6.1 Personal precautions, protective equipment and emergency procedures***
*Wear protective equipment. Keep unprotected persons away.*
· ***6.2 Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***6.3 Methods and material for containment and cleaning up:***
*Dispose contaminated material as waste according to section 13.*
*Ensure adequate ventilation.*
· ***6.4 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*

· ***7.1 Precautions for safe handling*** *No special precautions are necessary if used correctly.*
· ***Information about fire - and explosion protection:***
*Do not spray onto a naked flame or any incandescent material.*
*Keep ignition sources away - Do not smoke.*
*Pressurised 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.*

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
*Observe official regulations on storing packagings with pressurised containers.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:*** *Keep container tightly sealed.*
· ***7.3 Specific end use(s)*** *No further relevant information available.*

## *8 Exposure controls/personal protection*

· ***8.1 Control parameters***
· ***Ingredients with limit values that require monitoring at the workplace:***

***115-10-6 dimethyl ether***

*WEL Short-term value: 958 mg/m³, 500 ppm*
*Long-term value: 766 mg/m³, 400 ppm*

***123-86-4 n-butyl acetate***

*WEL Short-term value: 966 mg/m³, 200 ppm*
*Long-term value: 724 mg/m³, 150 ppm*

***78-93-3 butanone***

*WEL Short-term value: 899 mg/m³, 300 ppm*
*Long-term value: 600 mg/m³, 200 ppm*
*Sk, BMGV*

***108-65-6 2-methoxy-1-methylethyl acetate***

*WEL Short-term value: 548 mg/m³, 100 ppm*
*Long-term value: 274 mg/m³, 50 ppm*
*Sk*

(Contd. on page 5)

(Contd. of page 4)

***80-62-6 methyl methacrylate***

*WEL Short-term value: 416 mg/m³, 100 ppm*
*Long-term value: 208 mg/m³, 50 ppm*

· ***Ingredients with biological limit values:***

***78-93-3 butanone***

*BMGV 70 µmol/L*
*Medium: urine*
*Sampling time: post shift*
*Parameter: butan-2-one*

· ***Additional information:*** *The lists valid during the making were used as basis.*

· ***8.2 Exposure controls***
· ***Appropriate engineering controls*** *No further data; see section 7.*
· ***Individual protection measures, such as personal protective equipment***
· ***General protective and hygienic measures:***
*Immediately remove all soiled and contaminated clothing*
*Wash hands before breaks and at the end of work.*
· ***Respiratory protection:*** *Not required.*
· ***Hand protection***

*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*
*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*
*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/face protection*** *Not required.*

## 9 Physical and chemical properties

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

| | |
|---|---|
| · ***Physical state*** | *Aerosol* |
| · ***Colour:*** | *According to product specification* |
| · ***Odour:*** | *Characteristic* |
| · ***Odour threshold:*** | *Not determined.* |
| · ***Melting point/freezing point:*** | *Undetermined.* |
| · ***Boiling point or initial boiling point and boiling range*** | *80 °C* |
| · ***Flammability*** | *Not applicable.* |
| · ***Lower and upper explosion limit*** | |
| · ***Lower:*** | *2 Vol %* |

(Contd. on page 6)

(Contd. of page 5)

| | |
|---|---|
| · **Upper:** | 11 Vol % |
| · **Flash point:** | 9 °C |
| · **Auto-ignition temperature:** | 226 °C |
| · **Decomposition temperature:** | Not determined. |
| · **pH** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic viscosity** | Not determined. |
| · **Dynamic:** | Not determined. |
| · **Solubility** | |
| · **water:** | Not miscible or difficult to mix. |
| · **Partition coefficient n-octanol/water (log value)** | Not determined. |
| · **Vapour pressure at 20 °C:** | 5,200 hPa (115-10-6 dimethyl ether) |
| · **Density and/or relative density** | |
| · **Density at 20 °C:** | 0.91 g/cm³ |
| · **Relative density** | Not determined. |
| · **Bulk density:** | 776–777 kg/m³ |
| · **Vapour density** | Not determined. |

· **9.2 Other information**

| | |
|---|---|
| · **Appearance:** | |
| · **Form:** | Aerosol |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Explosive properties:** | Product is not explosive. However, formation of explosive air/vapour mixtures are possible. |
| · **Solvent content:** | |
| · **Organic solvents:** | 86.0 % |
| · **VOC (EC)** | 86.00 % |
| · **Solids content:** | 13.8 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not applicable. |

· **Information with regard to physical hazard classes**

| | |
|---|---|
| · **Explosives** | Void |
| · **Flammable gases** | Void |
| · **Aerosols** | Flammable aerosol. Pressurised container: May burst if heated. |
| · **Oxidising gases** | Void |
| · **Gases under pressure** | Void |
| · **Flammable liquids** | Void |
| · **Flammable solids** | Void |
| · **Self-reactive substances and mixtures** | Void |
| · **Pyrophoric liquids** | Void |
| · **Pyrophoric solids** | Void |
| · **Self-heating substances and mixtures** | Void |
| · **Substances and mixtures, which emit flammable gases in contact with water** | Void |
| · **Oxidising liquids** | Void |
| · **Oxidising solids** | Void |
| · **Organic peroxides** | Void |
| · **Corrosive to metals** | Void |

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· **Desensitised explosives** Void

## 10 Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.
· **LD/LC50 values relevant for classification:**

**115-10-6 dimethyl ether**
Inhalative LC50/4 h 308 mg/l (rat)

**123-86-4 n-butyl acetate**
Oral LD50 13,100 mg/kg (rat)
Dermal LD50 >5,000 mg/kg (rabbit)
Inhalative LC50/4 h >21 mg/l (rat)

**78-93-3 butanone**
Oral LD50 3,300 mg/kg (rat)
Dermal LD50 5,000 mg/kg (rabbit)

**108-65-6 2-methoxy-1-methylethyl acetate**
Oral LD50 8,532 mg/kg (rat)
Inhalative LC50/4 h 35.7 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)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation**
Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation** 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.
· **STOT-single exposure** May cause drowsiness or dizziness.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

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· **11.2 Information on other hazards**
· **Endocrine disrupting properties**
78-93-3 butanone: List II

## 12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Endocrine disrupting properties**
For information on endocrine disrupting properties see section 11.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

## 13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
· **European waste catalogue**
HP3 Flammable
HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

* 

## 14 Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1950
· **14.2 UN proper shipping name**
· **ADR** 1950 AEROSOLS
· **IMDG** AEROSOLS
· **IATA** Aerosols, flammable

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· **14.3 Transport hazard class(es)**

· **ADR**

| | |
|---|---|
| · **Class** | 2 5F Gases. |
| · **Label** | 2.1 |

· **IMDG, IATA**

| | |
|---|---|
| · **Class** | 2.1 Gases. |
| · **Label** | 2.1 |
| · **14.4 Packing group** | |
| · **ADR, IMDG, IATA** | not regulated |
| · **14.5 Environmental hazards:** | Not applicable. |
| · **14.6 Special precautions for user** | Warning: Gases. |
| · **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. |
| · **14.7 Maritime transport in bulk according to IMO instruments** | Not applicable. |

· **Transport/Additional information:**

| | |
|---|---|
| · **ADR** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E0<br>Not permitted as Excepted Quantity |
| · **Transport category** | 2 |
| · **Tunnel restriction code** | D |

| | |
|---|---|
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E0<br>Not permitted as Excepted Quantity |

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· **UN "Model Regulation":** UN 1950 AEROSOLS, 2.1

## 15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Poisons Act**
· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category** P3a FLAMMABLE AEROSOLS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 150 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**
· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

78-93-3 butanone: 3

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

78-93-3 butanone: 3

· **15.2 Chemical safety assessment:**
A Chemical Safety Assessment has not been carried out.

## 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.

· **Relevant phrases**
H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

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H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.

· **Department issuing SDS:** Product safety department.
· **Contact:** sds@mgchemicals.com
· **Date of previous version:** 28.09.2023
· **Version number of previous version:** 3
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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
Flam. Gas 1A: Flammable gases – Category 1A
Aerosol 2: Aerosols – Category 2
Press. Gas (Comp.): Gases under pressure – Compressed gas
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
· ***** Data compared to the previous version altered.**