



Printing date 07.05.2024 Version number 5 (replaces version 4) Revision: 07.05.2024

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

- · 1.1 Product identifier
- Trade name: 843AR
- · Other Means of Identification:

Super Shield™ Silver Coated Copper Conductive Paint (Aerosol)

- · Related Part Number: 843AR-140G, 843AR-340G
- · **UFI:** 82M0-70V9-700X-8WTR
- · 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 Electrically conductive coating and EMI/RFI shielding.
- · 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:

Verisk 3E (Access code: 335388), +(44) 20 3514787 Other emergency telephone numbers: +(0) 800 680 0425

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

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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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.



GHS09 environment

Aquatic Chronic 2 H411

Toxic to aquatic life with long lasting effects.



GHS07

Eye Irrit. 2

H319

Causes serious eye irritation.

STOT SE 3 H3

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 GHS09

- · Signal word Warning
- · Hazard-determining components of labelling: acetone
- · Hazard statements

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

H319

Causes serious eye irritation.

H336

May cause drowsiness or dizziness.

H411

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.

P261

Avoid breathing mist/vapours/spray.

P273

Avoid release to the environment.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/Product Safety Department if you feel unwell.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

· Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

Product contains: Reportable explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 9.

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- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- vPvB: Not applicable.
- · Determination of endocrine-disrupting properties

Endocrine Disruptor substance ≥ 0.1% = none

3 Composition/information on ingredients

- · 3.2 Mixtures
- · Description: Mixture of substances listed below with nonhazardous additions.
- · Dangerous components:

CAS: 67-64-1 acetone EINECS: 200-662-2 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	32.0%
CAS: 74-98-6 propane EINECS: 200-827-9 🏇 Flam. Gas 1A, H220; Press. Gas (Comp.), H280	13.0%
CAS: 123-86-4 n-butyl acetate EINECS: 204-658-1 � Flam. Liq. 3, H226; � STOT SE 3, H336, EUH066	12.0%
CAS: 616-38-6 dimethyl carbonate EINECS: 210-478-4 (a) Flam. Liq. 2, H225	12.0%
CAS: 7440-50-8 copper EINECS: 231-159-6 (Aquatic Chronic 2, H411	10.0%
CAS: 75-28-5 isobutane EINECS: 200-857-2 🌣 Flam. Gas 1A, H220; Press. Gas (Comp.), H280	7.0%
CAS: 110-43-0 heptan-2-one EINECS: 203-767-1 Flam. Liq. 3, H226; Acute Tox. 4, H302; Acute Tox. 4, H332	7.0%
CAS: 108-65-6 2-methoxy-1-methylethyl acetate EINECS: 203-603-9 🏇 Flam. Liq. 3, H226	2.0%
CAS: 7440-22-4 Silver (Powder <0.0001mm) EINECS: 231-131-3 Aquatic Acute 1, H400 (M=1000); Aquatic Chronic 1, H410 (M=100)	1.0%
Additional information: For the wording of the listed hazard phrases refer to section	า 16.

4 First aid measures

- · 4.1 Description of first aid measures
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Generally the product does not irritate the skin.
- · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- · 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.

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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.

- · 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 product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

- 6.3 Methods and material for containment and cleaning up: 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 Ensure good ventilation/exhaustion at the workplace.
- · 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:

67-64-1 acetone

WEL Short-term value: 3620 mg/m³, 1500 ppm Long-term value: 1210 mg/m³, 500 ppm

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123-86-4 n-butyl acetate

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

7440-50-8 copper

WEL Short-term value: 2** mg/m³ Long-term value: 0.2* 1** mg/m³ *fume **dusts and mists (as Cu)

110-43-0 heptan-2-one

WEL Short-term value: 475 mg/m³, 100 ppm Long-term value: 237 mg/m³, 50 ppm

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

· 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:

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 eyes.

Avoid contact with the eyes and skin.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Hand protection

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

Safety glasses



Tightly sealed goggles

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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: CharacteristicOdour threshold: Not determined.

· Melting point/freezing point: Undetermined.

Boiling point or initial boiling point and

boiling range 56 ℃

· Flammability Not applicable.

· Lower and upper explosion limit

Lower: 2 Vol % (123-86-4 n-butyl acetate)
 Upper: 13 Vol % (67-64-1 acetone)

· Flash point: -17 ℃

• **Auto-ignition temperature**: 370 ℃ (123-86-4 n-butyl acetate)

Decomposition temperature: Not determined.pH Not determined.

Viscosity:

Kinematic viscosityDynamic:Not determined.Not determined.

Solubility

· water: Fully miscible.

· Partition coefficient n-octanol/water (log

value) Not determined.

Vapour pressure at 20 ℃: 8,300 hPa (74-98-6 propane)

· Vapour pressure at 50 °C: 800 hPa

· Density and/or relative density

Density at 20 °C:
Relative density
Bulk density:
Vapour density
1.2 g/cm³
Not determined.
1,577 kg/m³
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: 66.0 %
 VOC (EC) 85.00 %
 Solids content: 15.0 %

· Change in condition

· Evaporation rate Not applicable.

· Information with regard to physical hazard

classes

Explosives VoidFlammable gases Void

· Aerosols Flammable aerosol. Pressurised container:

May burst if heated.

· Oxidising gases Void

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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	
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:

ATE (Acute Toxicity Estimates)

Oral LD50 23,857 mg/kg (rat)

Inhalative LC50/4 h 157 mg/l

67-64-1 acetone

Oral LD50 5,800 mg/kg (rat)
Dermal LD50 20,000 mg/kg (rabbit)

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)

616-38-6 dimethyl carbonate

Oral LD50 13,000 mg/kg (rat)
Dermal LD50 >5,000 mg/kg (rabbit)

110-43-0 heptan-2-one

Oral LD50 1,670 mg/kg (rat)
Dermal LD50 12,600 mg/kg (rabbit)

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

Oral

LD50

8,532 mg/kg (rat)

Inhalative LC50/4 h 35.7 mg/l (rat)

- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Causes serious eye irritation.
- · Respiratory or skin sensitisation

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

- · 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.
- 11.2 Information on other hazards
- · Endocrine disrupting properties

None of the ingredients is listed.

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

The product does not contain substances with endocrine disrupting properties.

- · 12.7 Other adverse effects
- · Remark: Toxic for fish
- · 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.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

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

HP4 Irritant - skin irritation and eye damage

HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP14 Ecotoxic

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- Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agents: Water, if necessary together with cleansing agents.

UN1950

HAZARDOUS

Aerosols, non-flammable

14 Transport information

- · 14.1 UN number or ID number
- · ADR, IMDG, IATA
- · 14.2 UN proper shipping name
- · ADR
- · IMDG
- ·IATA
- · 14.3 Transport hazard class(es)
- · ADR





2 5A Gases. · Class

· Label 2.1

· IMDG





· Class 2.1 Gases. · Label 2.1

·IATA



· Class 2.1 Gases. · Label

· 14.4 Packing group

· ADR, IMDG, IATA

· 14.5 Environmental hazards:

· Marine pollutant:

Special marking (ADR):

· 14.6 Special precautions for user

Hazard identification number (Kemler code):

· EMS Number:

· Stowage Code

· Segregation Code

2.1

not regulated

Symbol (fish and tree) Symbol (fish and tree) Warning: Gases.

F-D,S-U

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

1950 AEROSOLS, ENVIRONMENTALLY

AEROSOLS, MARINE POLLUTANT

living quarters.

SG69 For AEROSOLS with a maximum

capacity of 1 litre:

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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:

· Limited quantities (LQ)

· Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

· Transport category · Tunnel restriction code Ε

1L

· Limited quantities (LQ)

UN "Model Regulation":

1L

· Excepted quantities (EQ)

Code: E0

Not permitted as Excepted Quantity

UN 1950 AEROSOLS, 2.1,

ENVIRONMENTALLY HAZARDOUS

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

67-64-1 acetone: 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

E2 Hazardous to the Aquatic Environment

- · 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.

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· 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

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

67-64-1 acetone: 3

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

67-64-1 acetone: 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 quarantee 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.

Harmful if swallowed. H302

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

- · Department issuing SDS: Product safety department.
- · Contact: sds@mgchemicals.com
- Date of previous version: 13.09.2023
- · Version number of previous version: 4
- · 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

ATE: Acute toxicity estimate values

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

Acute Tox. 4: Acute toxicity - Category 4

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Eye Irrit. 2: Serious eye damage/eye irritation – Category 2 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

* Data compared to the previous version altered.