

Revision: 27.03.2024



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

Printing date 27.03.2024 Version number 4 (replaces version 3)

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

- · 1.1 Product identifier
- · Trade name: 841AR
- · Other Means of Identification: Super Shield™ Nickel Conductive Paint (Aerosol)
- · Related Part Number: 841AR-Aerosol, 841AR-340G
- · UFI: T6K0-50YA-6000-NH03
- 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 shield
- · 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.



GHS08 health hazard

Carc. 2 H351 STOT RE 1 H372 Suspected of causing cancer. Route of exposure: Inhalation.

Causes damage to the respiratory system through prolonged

or repeated exposure. Route of exposure: Inhalation.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H336 May cause drowsiness or dizziness.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· 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 GHS08

- · Signal word Danger
- · Hazard-determining components of labelling: nickel
- · Hazard statements

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

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

H336 May cause drowsiness or dizziness.

H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P102 Keep out of reach of children.

P201 Obtain special instructions before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition

sources. No smoking.

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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 ℃/122 ℉.

· Additional information:

EUH006 Explosive with or without contact with air.

EUH208: Contains nickel. May produce an allergic reaction.

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

- · 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:

<u>go.ouo oopoo</u>	
CAS: 7440-02-0 nickel EINECS: 231-111-4 & Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317	31.0%
CAS: 67-64-1 acetone EINECS: 200-662-2 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	18.0%
CAS: 74-98-6 propane EINECS: 200-827-9 🏇 Flam. Gas 1A, H220; Press. Gas (Comp.), H280	13.0%
CAS: 616-38-6 dimethyl carbonate EINECS: 210-478-4 Flam. Liq. 2, H225	11.0%
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	6.0%
CAS: 123-86-4 n-butyl acetate EINECS: 204-658-1 Flam. Lig. 3, H226; STOT SE 3, H336, EUH066	6.0%
CAS: 108-65-6 2-methoxy-1-methylethyl acetate EINECS: 203-603-9 Flam. Liq. 3, H226	1.0%

4 First aid measures

· 4.1 Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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

· 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.

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· After eye contact:

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

- · 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.

- 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:

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:

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 Open and handle receptacle with care.
- · Information about fire and explosion protection:

Do not spray onto a naked flame or any incandescent material.

Keep ignition sources away - Do not smoke.

Keep respiratory protective device available.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 ℃, 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.

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· 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:

7440-02-0 nickel

WEL Long-term value: 0.5 mg/m³

as Ni; Sk; Carc

67-64-1 acetone

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

110-43-0 heptan-2-one

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

123-86-4 n-butyl acetate

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

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- · 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.

Store protective clothing separately.

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



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

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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

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state

Colour:

· Odour:

· Odour threshold: • Melting point/freezing point:

· Boiling point or initial boiling point and boiling range

· Flammability · Lower and upper explosion limit

Lower:

· Upper:

· Flash point: Auto-ignition temperature:

· Decomposition temperature: · pH

Viscosity:

· Kinematic viscosity · Dynamic:

· Solubility

water:

· Partition coefficient n-octanol/water (log

value)

· Vapour pressure at 20 ℃:

Vapour pressure at 50 ℃: Density and/or relative density

· Density at 20 °C: · Relative density · Bulk density: · Vapour density

· 9.2 Other information

· Appearance: · Form:

· Important information on protection of health and environment, and on safety.

· Ignition temperature:

· Explosive properties:

· Solvent content: Organic solvents:

According to product specification

Characteristic Not determined. Undetermined.

56 ℃

Not applicable.

2 Vol % (74-98-6 propane) 13 Vol % (67-64-1 acetone)

-17 ℃ 315 ℃

Not determined. Not determined.

Not determined.

Not determined.

Fully miscible.

Not determined.

8,300 hPa (74-98-6 propane)

800 hPa

1.3 g/cm³

Not determined. 3,411 kg/m³ Not determined.

Aerosol

Product is not selfigniting.

Explosive with or without contact with air.

44.0 %

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· VOC (EC)· Solids content:62.00 %38.0 %

· 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
• Oxidising solids
• Organic peroxides
• Corrosive to metals
• Desensitised explosives

• Void
• Void
• Void
• Void
• Void
• 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 27,833 mg/kg (rat)

Inhalative LC50/4 h 183 mg/l

67-64-1 acetone

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

616-38-6 dimethyl carbonate

Oral LD50 13,000 mg/kg (rat)

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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)

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)

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 May cause an allergic skin reaction.
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Suspected of causing cancer. Route of exposure: Inhalation.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- STOT-single exposure May cause drowsiness or dizziness.
- STOT-repeated exposure

Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

- · 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: Harmful to 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. Harmful to aquatic organisms

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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

HP7 Carcinogenic

HP13 Sensitising

HP14 Ecotoxic

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

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
- · 14.3 Transport hazard class(es)
- · ADR



· Class 2 5F Gases.

- **Label** 2.1

· IMDG, IATA



· Class

· Label

· 14.4 Packing group

· ADR, IMDG, IATA

- · 14.5 Environmental hazards:
- · 14.6 Special precautions for user
- · Hazard identification number (Kemler code):
- · EMS Number:
- · Stowage Code

2.1 Gases.

2.1

not regulated Not applicable. 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

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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

Not permitted as Excepted Quantity

Transport categoryTunnel restriction code

· IMDG

· Limited quantities (LQ) 1L

• Excepted quantities (ÉQ) Code: E0

Not permitted as Excepted Quantity

· 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

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
- · 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, 27
- 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.
- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H372 Causes damage to organs through prolonged or repeated exposure.

EUH066 Repeated exposure may cause skin dryness or cracking.

- · Department issuing SDS: Product safety department.
- · Contact: sds@mgchemicals.com
- Date of previous version: 18.01.2024
- · 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

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

Skin Sens. 1: Skin sensitisation - Category 1

Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

* Data compared to the previous version altered.