

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

Printing date 12.03.2024

Version number 5 (replaces version 4)

Revision: 12.03.2024

1 Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** 841AR-Liquid**Other Means of Identification:**Super ShieldTM Nickel Conductive Paint / Nickel Conductive Paint**Related Part Number:**

841AR-Liquid, 841AR-15ML, 841AR-150ML, 841AR-900ML, 841AR-3.78L

UFI: 49K0-P0NQ-G00G-9UK5**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

Flam. Liq. 2

H225 Highly flammable liquid and vapour.



GHS08 health hazard

Carc. 2

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

STOT RE 1

H372 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 powder (particle diameter < 1 mm)

· **Hazard statements**

H225 Highly flammable liquid and vapour.

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.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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P271 Use only outdoors or in a well-ventilated area.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

Additional information:

EUH208: Contains nickel powder (particle diameter < 1 mm). May produce an allergic reaction.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Determination of endocrine-disrupting properties

Endocrine Disruptor substance $\geq 0.1\%$ = none

3 Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 7440-02-0	nickel powder (particle diameter < 1 mm)	48.0%
EINECS: 231-111-4	☠ Carc. 2, H351; STOT RE 1, H372; ☠ Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 616-38-6	dimethyl carbonate	16.0%
EINECS: 210-478-4	☠ Flam. Liq. 2, H225	
CAS: 67-64-1	acetone	13.0%
EINECS: 200-662-2	☠ Flam. Liq. 2, H225; ☠ Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	
CAS: 110-43-0	heptan-2-one	10.0%
EINECS: 203-767-1	☠ Flam. Liq. 3, H226; ☠ Acute Tox. 4, H302; Acute Tox. 4, H332	
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	2.0%
EINECS: 203-603-9	☠ Flam. Liq. 3, H226	

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

General information:

Immediately remove any clothing soiled by the product.

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

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. If symptoms persist, consult a doctor.

After swallowing: If symptoms persist consult doctor.

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- **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**
During heating or in case of fire poisonous gases are produced.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

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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 powder (particle diameter < 1 mm)**

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
Sk

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.
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 in advance and has therefore to be checked prior to the application.

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· **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**

Tightly sealed goggles

9 Physical and chemical properties

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

Fluid

· **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**

56 °C

· **Flammability**

Highly flammable.

· **Lower and upper explosion limit**· **Lower:**

1 Vol % (110-43-0 heptan-2-one)

· **Upper:**

13 Vol % (67-64-1 acetone)

· **Flash point:**

-17 °C (67-64-1 acetone)

· **Auto-ignition temperature:**

315 °C

· **Decomposition temperature:**

Not determined.

· **pH**

Not determined.

· **Viscosity:**· **Kinematic viscosity**

Not determined.

· **Dynamic:**

Not determined.

· **Solubility**· **water:**

Fully miscible.

· **Partition coefficient n-octanol/water (log value)**

Not determined.

· **Vapour pressure at 20 °C:**

233 hPa (67-64-1 acetone)

· **Vapour pressure at 50 °C:**

800 hPa

· **Density and/or relative density**· **Density at 20 °C:**1.7 g/cm³· **Relative density**

Not determined.

· **Vapour density**

Not determined.

· **9.2 Other information**· **Appearance:**· **Form:**

Fluid

· **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:**

25.0 %

· **VOC (EC)**

41.00 %

· **Solids content:**

11.0 %

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· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Highly flammable liquid and vapour.
· 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 16,700 mg/kg (rat)

Inhalative LC50/4 h 110 mg/l

616-38-6 dimethyl carbonate

Oral LD50 13,000 mg/kg (rat)

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

67-64-1 acetone

Oral LD50 5,800 mg/kg (rat)

Dermal LD50 20,000 mg/kg (rabbit)

110-43-0 heptan-2-one

Oral LD50 1,670 mg/kg (rat)

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Dermal LD50 12,600 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)

· **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

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

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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**

UN1263

· **14.2 UN proper shipping name**· **ADR**

1263 PAINT

· **IMDG**

PAINT

· **IATA**

Paint

· **14.3 Transport hazard class(es)**· **ADR, IMDG, IATA**· **Class**

3 Flammable liquids.

· **Label**

3

· **14.4 Packing group**· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Hazard identification number (Kemler code):**

33

· **EMS Number:**

F-E, S-E

· **Stowage Category**

B

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **Transport/Additional information:**· **ADR**· **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

· **Transport category**

2

· **Tunnel restriction code**

D/E

· **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

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· **UN "Model Regulation":**

UN 1263 PAINT, 3, II

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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 P5c FLAMMABLE LIQUIDS**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 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.

· **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**

67-64-1 acetone

· **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 guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

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.

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*H351 Suspected of causing cancer.**H372 Causes damage to organs through prolonged or repeated exposure.**H412 Harmful 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:** 11.03.2024· **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. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

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.**

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