Kit Revision Date: 15/06/2021

SUPER SHIELD™ SILVER COATED COPPER EPOXY CONDUCTIVE PAINT KIT

MG Chemicals Multipart Product Kit

This product is a kit made up of multiple parts. Each part is an independently packaged chemical component and has independent hazard assessments.

Kit Content

Part	*Product Name*	*Product Use*
A	843ER-A	Electrically conductive epoxy coating resin for use with hardeners
B	843ER-B	Electrically conductive epoxy coating hardener for use with resins

Safety Data Sheets for each part listed above follow this cover sheet.

Transportation Instruction

Before offering this product kit for transport, read Section 14 for all parts listed above.

according to 1907/2006/EC, Article 31

Printing date 27.11.2023 Version number 3 Revision: 27.11.2023

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

· **1.1 Product identifier**

· **Trade name: 843ER-Part A**
· **Other Means of Identification:**
Super ShieldTM Silver Coated Copper Epoxy Conductive Paint (Part A)

· **Related Part Number:** 843ER-Part A, 843ER-A-250ML, 843ER-A-800ML, 843ER-A-3.25L
· **UFI:** 67M0-8082-U00X-KKYV
· **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 epoxy coating resin for use with hardeners.

· **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

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.

GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

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according to 1907/2006/EC, Article 31

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GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
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 GHS05 GHS07 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
butan-1-ol
butanone
· **Hazard statements**
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H410 Very toxic 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.
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.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Additional information:**
Contains reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700). May produce an allergic reaction.
Safety data sheet available on request.

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according to 1907/2006/EC, Article 31

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Trade name: 843ER-Part A

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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**
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: 78-93-3 EINECS: 201-159-0	butanone Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	42.0%
CAS: 7440-50-8 EINECS: 231-159-6	copper Aquatic Chronic 2, H411	22.0%
CAS: 25068-38-6 NLP: 500-033-5	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317, EUH205 Specific concentration limits: Eye Irrit. 2; H319: C ≥ 5 % Skin Irrit. 2; H315: C ≥ 5 %	19.0%
CAS: 67-63-0 EINECS: 200-661-7	propan-2-ol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	5.0%
CAS: 71-36-3 EINECS: 200-751-6	butan-1-ol Flam. Liq. 3, H226; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	5.0%
CAS: 7440-22-4 EINECS: 231-131-3	Silver (Powder <0.0001mm) Aquatic Acute 1, H400 (M=1000); Aquatic Chronic 1, H410 (M=100)	3.0%
CAS: 14807-96-6 EINECS: 238-877-9	Talc (Mg3H2(SiO3)4) STOT SE 1, H370; STOT RE 1, H372	2.0%

· **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.
· **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. Then 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.

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· ***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.*

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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.
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).
Use neutralising agent.
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.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· ***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.
· ***7.3 Specific end use(s)*** *No further relevant information available.*

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8 Exposure controls/personal protection

· **8.1 Control parameters**

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

78-93-3 butanone

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

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)

67-63-0 propan-2-ol

WEL Short-term value: 1250 mg/m³, 500 ppm
Long-term value: 999 mg/m³, 400 ppm

71-36-3 butan-1-ol

WEL Short-term value: 154 mg/m³, 50 ppm
Sk

· **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:**
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 skin.
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**

Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**	
· **Physical state**	Fluid
· **Colour:**	Brown
· **Odour:**	Characteristic
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Undetermined.
· **Boiling point or initial boiling point and boiling range**	80 °C
· **Flammability**	Highly flammable.
· **Lower and upper explosion limit**	
· **Lower:**	1.8 Vol % (78-93-3 butanone)
· **Upper:**	11.5 Vol % (78-93-3 butanone)
· **Flash point:**	-3 °C
· **Auto-ignition temperature:**	343 °C
· **Decomposition temperature:**	Not determined.
· **pH**	Not determined.
· **Viscosity:**	
· **Kinematic viscosity at 20 °C**	30 mm²/s
· **Dynamic:**	Not determined.
· **Solubility**	
· **water:**	Fully miscible.
· **Partition coefficient n-octanol/water (log value)**	Not determined.
· **Vapour pressure at 20 °C:**	105 hPa (78-93-3 butanone)
· **Density and/or relative density**	
· **Density at 20 °C:**	1.19 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:**	52.0 %
· **VOC (EC)**	52.00 %
· **Solids content:**	24.0 %

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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 15,800 mg/kg (rat)

78-93-3 butanone

Oral LD50 3,300 mg/kg (rat)
Dermal LD50 5,000 mg/kg (rabbit)

67-63-0 propan-2-ol

Oral LD50 5,045 mg/kg (rat)
Dermal LD50 12,800 mg/kg (rabbit)
Inhalative LC50/4 h 30 mg/l (rat)

71-36-3 butan-1-ol

Oral LD50 790 mg/kg (rat)

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Dermal LD50 3,400 mg/kg (rabbit)
Inhalative LC50/4 h 8,000 mg/l (rat)
· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye damage.
· **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.
· **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**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very 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
HP13 Sensitising
HP14 Ecotoxic

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Trade name: 843ER-Part A

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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.

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14 Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1139
· **14.2 UN proper shipping name**
· **ADR** 1139 COATING SOLUTION, ENVIRONMENTALLY HAZARDOUS
· **IMDG** COATING SOLUTION
· **IATA** Coating solution
· **14.3 Transport hazard class(es)**

· **ADR**

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

· **IMDG, IATA**

· **Class** 3 Flammable liquids.
· **Label** 3
· **14.4 Packing group**
· **ADR, IMDG, IATA** II
· **14.5 Environmental hazards:**
· **Special marking (ADR):** Symbol (fish and tree)
· **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

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· **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
· **UN "Model Regulation":**	UN 1139 COATING SOLUTION, 3, II, 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**
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**
E1 Hazardous to the Aquatic Environment
P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 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.

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Trade name: 843ER-Part A

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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.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
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.
EUH205 Contains epoxy constituents. May produce an allergic reaction.

· **Department issuing SDS:** Product safety department.
· **Contact:** sds@mgchemicals.com
· **Date of previous version:** 13.09.2023
· **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
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
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.**

according to 1907/2006/EC, Article 31

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

· **1.1 Product identifier**

· **Trade name: 843ER-Part B**
· **Other Means of Identification:**
Super ShieldTM Silver Coated Copper Epoxy Conductive Paint (Part B)

· **Related Part Number:** 843ER-Part B, 843ER-B-250ML, 843ER-B-800ML, 843ER-B-3.25L
· **UFI:** PAM0-R0XG-500E-7XJX
· **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 epoxy coating hardener for use with resins.

· **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

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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.

GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

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according to 1907/2006/EC, Article 31

Printing date 23.11.2023 Version number 4 Revision: 23.11.2023

Trade name: 843ER-Part B

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GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

GHS07

Skin Irrit. 2	H315 Causes skin irritation.
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 GHS05 GHS07 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**
fatty acids, C18-unsatd., dimers, reactionproducts with polyethylenepolyamines
butanone
butan-1-ol
3,6-diazaoctanethylenediamin
· **Hazard statements**
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H411 Toxic 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.
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.
P310	Immediately call a POISON CENTER/doctor.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**
Contains 3,6-diazaoctanethylenediamin. May produce an allergic reaction.
Safety data sheet available on request.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

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· **vPvB:** Not applicable.
· **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: 78-93-3	butanone	55.0%
EINECS: 201-159-0	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	
CAS: 68410-23-1	fatty acids, C18-unsatd., dimers, reactionproducts with polyethylenepolyamines	34.0%
	Eye Dam. 1, H318; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1, H317	
CAS: 67-63-0	propan-2-ol	5.0%
EINECS: 200-661-7	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 71-36-3	butan-1-ol	4.0%
EINECS: 200-751-6	Flam. Liq. 3, H226; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	
CAS: 112-24-3	3,6-diazaoctanethylenediamin	1.0%
EINECS: 203-950-6	Skin Corr. 1B, H314; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	

· **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.
· **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. Then 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.

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.

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· **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.
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).
Use neutralising agent.
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.
Prevent formation of aerosols.
· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **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.
· **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:**

78-93-3 butanone

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

67-63-0 propan-2-ol

WEL Short-term value: 1250 mg/m³, 500 ppm
Long-term value: 999 mg/m³, 400 ppm

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71-36-3 butan-1-ol

WEL Short-term value: 154 mg/m³, 50 ppm
Sk

· ***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:***
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 skin.
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.
· ***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*

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· **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**	79–80.5 °C (78-93-3 butanone)
· **Flammability**	Highly flammable.
· **Lower and upper explosion limit**	
· **Lower:**	1.8 Vol % (78-93-3 butanone)
· **Upper:**	11.5 Vol % (78-93-3 butanone)
· **Flash point:**	-9 °C (78-93-3 butanone)
· **Auto-ignition temperature:**	425 °C (67-63-0 propan-2-ol)
· **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:**	105 hPa (78-93-3 butanone)
· **Density and/or relative density**	
· **Density at 20 °C:**	0.84148–0.84315 g/cm³
· **Relative density**	Not determined.
· **Bulk density:**	841–843 kg/m³
· **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:**	64.0 %
· **VOC (EC)**	64.00 %
· **Solids content:**	1.0 %
· **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

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· **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	19,750 mg/kg (rat)
Dermal	LD50	80,500 mg/kg (rabbit)

78-93-3 butanone

Oral	LD50	3,300 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rabbit)

67-63-0 propan-2-ol

Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

71-36-3 butan-1-ol

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

112-24-3 3,6-diazaoctanethylenediamin

Oral	LD50	2,500 mg/kg (rat)
Dermal	LD50	805 mg/kg (rabbit)

· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye damage.
· **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.

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· **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**

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**
· **Remark:** Toxic for fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even 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
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.

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14 Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1139

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· **14.2 UN proper shipping name**

· **ADR**	1139 COATING SOLUTION, ENVIRONMENTALLY HAZARDOUS
· **IMDG**	COATING SOLUTION
· **IATA**	Coating solution

· **14.3 Transport hazard class(es)**

· **ADR**

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

· **IMDG, IATA**

· **Class**	3 Flammable liquids.
· **Label**	3
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	II
· **14.5 Environmental hazards:**	
· **Special marking (ADR):**	Symbol (fish and tree)
· **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 1139 COATING SOLUTION, 3, II, 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**
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**
E2 Hazardous to the Aquatic Environment
P5c FLAMMABLE LIQUIDS
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 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**
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.

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H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
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:** *13.09.2023*
· **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
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
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
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· **** Data compared to the previous version altered.***