Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

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

· **1.1 Product identifier**

· **Trade name: Electrodag 502**

· **Article number:** AGG3734
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Product category** Chemical Family: Graphite/Carbon Black in Fluorelastomer.
· **Application of the substance / the preparation:** Not determined.

· **1.3 Details of the supplier of the safety data sheet**
· **Supplier.**
Agar Scientific Ltd
Parsonage Lane
Stansted CM24 8GF
United Kingdom
sales@agarscientific.com
Tel: +44 (0) 1279 813 519

· **Further information obtainable from:** Technical Support
· **1.4 Emergency telephone number:** 24 hours: +44 (0)1856 407333

*

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture** Appearance: Black liquid.
· **Classification according to Regulation (EC) No 1272/2008**


flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.


health hazard

Carc. 1A H350 May cause cancer.

Acute Tox. 4 H302 Harmful if swallowed.
Eye Irrit. 2 H319 Causes serious eye irritation.
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 CLP regulation.
· **Hazard pictograms**


GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Methyl Ethyl Ketone
Carbon black
· **Hazard statements**
H225 Highly flammable liquid and vapour.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 1)

H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H350 May cause cancer.
H336 May cause drowsiness or dizziness.

· **Precautionary statements**

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
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.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 78-93-3 EINECS: 201-159-0	Methyl Ethyl Ketone Flam. Liq. 2, H225; Acute Tox. 4, H302; Eye Irrit. 2, H319; STOT SE 3, H336	87.0%
CAS: 1333-86-4 EINECS: 215-609-9	Carbon black Self-heat. 2, H252; Carc. 1A, H350	3.0%
CAS: 7782-42-5 EINECS: 231-955-3	Graphite Skin Irrit. 2, H315	3.0%

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

SECTION 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:**
If excessive amounts of vapors or mists from this product are inhaled, remove to fresh air. Apply artificial respiration and other supportive measures as required. Consult a poison center, emergency room or lung specialist for additional information and guidance.
· **After skin contact:**
Immediately rinse with water.
If excessive skin contact with this product occurs, flush immediately with plenty of water, followed by washing with soap and water.
· **After eye contact:**
Rinse opened eye under running water. If symptoms persist, consult a doctor.
If this product is splashed into the eyes, flush eyes immediately with plenty of water for at least 15 minutes.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 2)

· **After swallowing:**
Call for a doctor immediately.
If swallowed, do not induce vomiting.
· **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.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
Large Fires: Water spray, fog or alcohol-resistant foam.
Small Fires: Dry chemical, CO_2, water spray or alcohol-resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **5.2 Special hazards arising from the substance or mixture**
Flash Point: -5 °C (Tag Closed Cup)
Flammable Limits: 1.8 % - 11.5 %
Auto-ignition point: ND
Hazardous combustion products: Oxides of carbon, Hydrogen fluoride, Carbonyl fluoride.
· **5.3 Advice for firefighters**
CAUTION: All these products have a very low flash point. Use of water spray when fighting fire may be inefficient. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Large Fires: Use water spray or fog; do not use straight streams. Move containers from fire area if you can do it without risk.
General Fires: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.
Fore massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and left fire burn.
Unusual Fire and Explosion Hazards: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in swears. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.
· **Protective equipment:**
Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
· **Additional information** DOT Class: Flammable liquids

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective gloves and glasses.
· **6.2 Environmental precautions:** 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 item 13.
Ensure adequate ventilation.
Steps to be Taken in Case Material is Released or Spilled: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 3)

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
Large Spills: Dike far ahead of liquid spill for later disposal. Water spray may reduce vapor; but may not prevent ignition in closed spaces.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

· **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.

*
SECTION 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.
Protect material from direct sunlight.

· **Information about fire - and explosion protection:**
The dried resin is combustible, similar to wood. Burning dry resin emits dense, black smoke. As latex, material is not combustible.
Protect against electrostatic charges.
Extinguishing media: Water fog - dried resin only.

· **7.2 Conditions for safe storage, including any incompatibilities**
Keep container closed. Loosen closure cautiously before opening. Store in a cool and well ventilated place; away from incompatible materials.
Ground and bond containers when transferring material. Empty containers may retain hazardous properties.
Follow all MSDS/label warnings even after container is emptied.

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Storage Temperature: Ambient. Preferred temperature less than 32 °C.
Storage Pressure: Atmospheric.

· **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.

*
SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**	
78-93-3 Methyl Ethyl Ketone	
WEL	Short-term value: 899 mg/m³, 300 ppm Long-term value: 600 mg/m³, 200 ppm Sk, BMGV
1333-86-4 Carbon black	
WEL	Short-term value: 7 mg/m³ Long-term value: 3.5 mg/m³

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 4)

· **Ingredients with biological limit values:**	
78-93-3 Methyl Ethyl Ketone	
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**
Ventilation required: Provide sufficient mechanical ventilation to maintain exposure below TLV(s). Overexposure to vapors and mists may be prevented by ensuring ventilation controls, local exhaust and/or fresh air entry.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
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.
NIOSH/MSHA Schedule TC-23C- air purifying or a Schedule TC-19C- air supplied respirator may also be used to reduce exposures. Read the manufacture's instructions and literature carefully to determine the type(s) of airborne contaminant(s) against which the respirator is effective and how it is to be properly fitted.
· **Protection of hands:**

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 protection:**

Tightly sealed goggles

Vapor tight chemical-type splash goggles should be worn when the possibility exists for eye contact due to splashing or spraying of liquid or the generation of airborne particles or vapors.
· **Body protection:**
Protective clothing, including an impermeable apron or disposable suit. This protective equipment should be constructed of material(s) which are appropriate to prevent contact with the chemicals listed in the ingredient section of the MSDS.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 5)

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Colour:	Black
· **Odour:**	Pleasant
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	80 °C
· **Flash point:**	-5 °C
· **Flammability (solid, gas):**	Not applicable.
· **Ignition temperature:**	514 °C
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Explosion limits:**	
Lower:	1.8 Vol %
Upper:	11.5 Vol %
· **Vapour pressure at 20 °C:**	105 hPa
· **Density at 20 °C:**	0.87 g/cm³
· **Relative density**	Not determined.
· **Vapour density at 20 °C**	>1 air
· **Evaporation rate at 20 °C**	>1 BUAC
· **Solubility in / Miscibility with water:**	Not miscible or difficult to mix.
· **Partition coefficient: n-octanol/water:**	Not determined.
· **Viscosity:**	
Dynamic at 20 °C:	600 mPas
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	87.0 %
VOC (EC)	755 g/l 87.00 %
Solids content:	10.0 %
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability** Stable.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** Not determined.

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 6)

· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** Strong oxidisers.
· **10.6 Hazardous decomposition products:** Not determined.
· **Additional information:** Hazardous Polymerization: Will not occur.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**
Harmful if swallowed.

· **LD/LC50 values relevant for classification:**		
78-93-3 Methyl Ethyl Ketone		
Oral	LD50	616 mg/kg (mouse)
		2,737 mg/kg (rat)
Dermal	LD50	6,480 mg/kg (rabbit)
Inhalative	LC50/4 h	32 mg/l (mouse)
1333-86-4 Carbon black		
Oral	LD50	10,000 mg/kg (rat)

· **Specific symptoms in biological assay:**
· **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.
· **Additional toxicological information:**
This product does contain a compound listed by NTP or IARC or regulated by OSHA as a carcinogen.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity**
May cause cancer.
· **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.

SECTION 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.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 7)

· **12.6 Other adverse effects** No further relevant information available.

SECTION 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.
Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous waste.
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, IMDG, IATA**	UN1193
· **14.2 UN proper shipping name**	
· **ADR**	1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE)
· **IMDG, IATA**	ETHYL METHYL KETONE (METHYL ETHYL KETONE)
· **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:**	
· **Marine pollutant:**	No
· **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 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category**	2

(Contd. on page 9)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 8)

· **Tunnel restriction code**	D/E
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **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 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **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

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. 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.
H252 Self-heating in large quantities; may catch fire.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H350 May cause cancer.

· **Department issuing SDS:** Sales department
· **Contact:**
sales@agarscientific.com
Tel: +44 (0) 1279 813 519
· **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

(Contd. on page 10)

Safety data sheet
according to 1907/2006/EC, Article 31

Date Printed 02.02.2022 **Version number 1** **Revision Date 02.02.2022**

Trade name: Electrodag 502

(Contd. of page 9)

Flam. Liq. 2: Flammable liquids – Category 2
Self-heat. 2: Self-heating substances and mixtures – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Carc. 1A: Carcinogenicity – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
· *** Data compared to the previous version altered.**