

# Safety data sheet

according to 1907/2006/EC, Article 31

Date Printed 16.02.2022

Version number 1

Revision Date 16.02.2022

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

- **1.1 Product identifier**
- **Trade name: EM Stain 336 (Uranyl Acetate Alternative)**
- **Article number:** AGR1260D
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Section staining for Electron Microscopy.
- **Application of the substance / the preparation:** No further relevant information available.
- **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**
- **Classification according to Regulation (EC) No 1272/2008**



Acute Tox. 4 H312 Harmful in contact with skin.

- **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**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
Gadolinium Triacetate  
Samarium Triacetate
- **Hazard statements**  
H312 Harmful in contact with skin.
- **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.
P280	Wear protective gloves / protective clothing.
P302+P352	IF ON SKIN: Wash with plenty of water.
P312	Call a POISON CENTER/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

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Revision Date 16.02.2022

**Trade name: EM Stain 336 (Uranyl Acetate Alternative)**

(Contd. of page 1)

- **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:

A mixture of lanthanum salts, samarium triacetate  $\text{Sm}(\text{CH}_3\text{COO})_3$  and gadolinium triacetate  $\text{Gd}(\text{CH}_3\text{COO})_3$  in water base.

#### · Dangerous components:

CAS: 10465-27-7 EINECS: 233-950-1	Samarium Triacetate ⚠ STOT SE 2, H371; ⚠ Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Aquatic Chronic 4, H413	1.5%
CAS: 10587-90-4 EINECS: 213-034-8	Lanthanum Triacetate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	1.5%
CAS: 10587-93-7	Gadolinium Triacetate ⚠ Acute Tox. 3, H301; Acute Tox. 3, H331; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	1.5%

- **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.

Irritant in case of skin contact, eye contact, ingestion or inhalation.

#### · After inhalation:

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

#### · After skin contact:

Immediately rinse with water.

After contact with skin wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

In case of serious skin contact wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

#### · After eye contact:

Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

#### · After swallowing:

Do not induce vomiting. Loosen tight clothing such as collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

### · 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** Non flammable.

(Contd. on page 3)

# Safety data sheet

according to 1907/2006/EC, Article 31

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Revision Date 16.02.2022

 Trade name: **EM Stain 336 (Uranyl Acetate Alternative)**

(Contd. of page 2)

- **Suitable extinguishing agents:**  
Use fire extinguishing methods suitable to surrounding conditions.  
Use methods and extinguishing agents according to surrounding fire.
- **5.2 Special hazards arising from the substance or mixture**  
Decomposition product carbon monoxide.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
It is not expected that the container sizes would result in a spill large enough to give concern.
- **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.  
Absorb with an inert material and put the spilled material in an appropriate waste disposal.
- **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**  
Keep away from heat. Empty containers do not pose a fire risk; evaporate any residue under a fume hood. Do not breathe gas/fumes/vapour/spray.  
Wear suitable protective clothing. In case of insufficient ventilation wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Keep container dry. Keep in a cool place. Keep container tightly closed. Keep in a cool, well-ventilated place. Avoid direct sunlight.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **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:**  
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Remove all soiled and contaminated clothing

(Contd. on page 4)

# Safety data sheet

according to 1907/2006/EC, Article 31

Date Printed 16.02.2022

Version number 1

Revision Date 16.02.2022

Trade name: **EM Stain 336 (Uranyl Acetate Alternative)**

(Contd. of page 3)

Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.

- **Respiratory protection:** Vapour respirator.
- **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:** Goggles recommended during refilling
- **Body protection:** Lab coat.

## SECTION 9: Physical and chemical properties

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

- **General Information**

- **Appearance:**

**Form:** Liquid  
**Colour:** According to product specification

- **Odour:** Characteristic

- **Odour threshold:** Not determined.

- **pH-value at 20 °C:** 3.5

- **Change in condition**

**Melting point/freezing point:** 0 °C  
**Initial boiling point and boiling range:** Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Not applicable.

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.

- **Explosion limits:**

**Lower:** Not determined.  
**Upper:** Not determined.

- **Vapour pressure at 20 °C:** 23 hPa

- **Density at 20 °C:** 1 g/cm<sup>3</sup>

- **Relative density** Not determined.

- **Vapour density** Not determined.

(Contd. on page 5)

# Safety data sheet

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Revision Date 16.02.2022

**Trade name: EM Stain 336 (Uranyl Acetate Alternative)**

(Contd. of page 4)

· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Water:</b>	95.5 %
<b>VOC (EC)</b>	0.00 %
<b>Solids content:</b>	0.0 %
· <b>9.2 Other information</b>	No further relevant information available.

## SECTION 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.

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**  
The product may be toxic to lungs, mucous membranes.
- **Acute toxicity**  
Harmful in contact with skin.

### · **LD/LC50 values relevant for classification:**

#### **10465-27-7 Samarium Triacetate**

Dermal	LD50	50 mg/kg (cat) (intravenous)
		10 mg/kg (mouse) (subcutaneous)

- **Specific symptoms in biological assay:**
- **Skin corrosion/irritation** Slightly hazardous in case of skin contact (permeator).
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** No data available.
- **Additional toxicological information:**
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **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** Based on available data, the classification criteria are not met.
- **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.

GB

(Contd. on page 6)

# Safety data sheet

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Revision Date 16.02.2022

Trade name: **EM Stain 336 (Uranyl Acetate Alternative)**

*(Contd. of page 5)*

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability**  
Possibly hazardous short term degradation products are not likely. Long term degradation products unknown.
- **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.
- **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.
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

<ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	No
<ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	Void

GB

*(Contd. on page 7)*

# Safety data sheet

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 Trade name: **EM Stain 336 (Uranyl Acetate Alternative)**

(Contd. of page 6)

**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.
- **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**  
 H301 Toxic if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H331 Toxic if inhaled.  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H371 May cause damage to organs.  
 H400 Very toxic to aquatic life.  
 H413 May cause long lasting harmful effects to aquatic life.
- **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  
 Acute Tox. 3: Acute toxicity – Category 3  
 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  
 STOT SE 2: Specific target organ toxicity (single exposure) – Category 2  
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
 Asp. Tox. 1: Aspiration hazard – Category 1  
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1  
 Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4
- **\* Data compared to the previous version altered.**