

MATERIAL SAFETY DATA SHEET

PRODUCT: Aqueous Dispersions of Magnetic Silica Particles

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name ADMAGSI500, ADMAGSI500R, ADMAGSI500NH2

Synonyms

Maghemite, Magnetite, Iron Oxide

Manufacturer's Details

Glantreo Ltd, ERI Building, Lee Road, Cork, IRELAND, T23 XE10
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Superparamagnetic nanoparticles coated with silica modified with Organic moieties

Chemical name	Magnetite, Iron Oxide	Classification	Xi, R36
CAS #	1317-61-9	REACH #	01-2119379499-16-0036

3. HAZARDS IDENTIFICATION

Could cause eye and skin irritation. Exposure may cause irritation to mucous membranes and upper respiratory tract. May be harmful if swallowed. Prolonged or repeated exposure to reagents may cause adverse reproductive effects. May cause fetal effects.

H225 FLAMMABLE LIQUIDS - Category 2

H315 SKIN IRRITATION - Category 2

H319 EYE IRRITATION - Category 2A

H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

H304 ASPIRATION HAZARD - Category 1

H400 AQUATIC HAZARD (ACUTE) - Category 1

H410 AQUATIC HAZARD (LONG-TERM) - Category 1

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 - Highly flammable liquid and vapor.

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

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H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

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

P273 - Avoid release to the environment.

Response : P391 - Collect spillage.

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Storage : P403 + P235 - Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read label before use

4. FIRST AID MEASURES

Inhalation

Move exposed person to fresh air. Get medical attention for any breathing difficulty. Loosen clothing and place exposed in a comfortable position. Seek medical assistance if cough or other symptoms appear.

Skin contact

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. If irritation develops seek medical attention.

Eye Contact

Rinse immediately with plenty of water, also under eyelids, for at least 15 minutes. Get prompt medical attention.

Ingestion

Drink lots of water. If large amounts were swallowed, get medical attention.

5. FIRE-FIGHTING MEASURES

Fire and Explosion Hazard

Negligible fire and explosion hazard

Suitable Extinguishing Media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Specific hazards

Special hazards arising from the substance or mixture: Thermal decomposition can lead to release of irritating gases and vapours;

Special Protective Equipment for Firefighter

Wear appropriate clothing to prevent skin exposure. Wear protective eyewear, gloves, and clothing. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Ensure adequate ventilation. Ensure that air-handling systems are operational. Avoid contact with skin and eyes.

Environmental Precautions

Refer to 12.0 ecotoxicology information.

Methods for Cleaning up

Shovel or sweep up. Shovel into suitable container for disposal. Avoid dust forming by spraying water on spillage. Avoid spillage from entering drains or water courses. Dispose of as normal trade waste in compliance with local and national regulations.

7. HANDLING AND STORAGE

Safe handling advice

Avoid contact with skin and eyes. Avoid the formation of dust. Do not breathe dust. Ensure adequate ventilation.

Technical measures / Storage conditions

Keep container tightly closed (hygroscopic).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Not available.

Personal Protection Equipment

Avoid contact with skin and eyes. Avoid dust formation.

9. PHYSICAL AND CHEMICAL PROPERTIES

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present

potential health and safety hazards. Contains: Organosilane bonded silica gel

Note: To the best of our knowledge, the acute and chronic toxicological properties of bonded silica gels have not been investigated. This product contains synthetic amorphous silica, and should not be confused with crystalline silica such as quartz, cristobalite, or tridymite, or with diatomaceous earth or other naturally occurring forms of amorphous silica that frequently contain crystalline forms of silica.

pH	n/a	Physical Appearance	Brown/Black Powder
Boiling point	2230°C	Form	Powder, beads or granules packed in Nalgene bottles
Melting point	1610°C	Colour	Brown Powder
Decomposition Temperature	>1600°C	Odour	Odourless
Flash Point	Not applicable	Vapour Pressure	Negligible
Flammability	Not applicable	Relative Density	1.55 g/cm ³
Auto Ignition Temperature	Not applicable	Water Solubility	Negligible

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Explosive Properties	Not applicable	Fat solubility	No data available
Explosion Limits	Not applicable		

10. STABILITY AND REACTIVITY

Conditions to avoid

Keep containers dry and tightly closed to avoid moisture absorption and contamination (hygroscopic).

Materials to avoid

Boric Anhydride (B_2O_3) + Calcium Oxide (CaO)
Bromine Trifluoride (BrF_3)

Hazardous decomposition products

Not applicable

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	No additional information	Single Target Organ (STOT)	No additional information
Chronic Toxicity	No additional information	Numerical Measures	No additional information
Corrosion Irritation	No additional information	Carcinogenicity:	Not listed as a carcinogen (ACGIH, IARC, NTP): 1343-98-2 (Silica Gel)
Sensitization	No additional information	Mutagenicity	No additional information
Human Experience	Skin, Eye irritation	Reproductive Toxicity	No additional information

12. ECOLOGICAL INFORMATION

Persistence	Stable	Bioaccumulation	No data available
Degradability	Stable	Mobility	No data available

Ecotoxicity LC50/96h

<i>Gambusia affinis</i>	13 400 mg/l	<i>Nitocra spinipes</i>	1600 mg/l
<i>Lepomis macrochirus</i>	10650 mg/l	<i>Nitzschia linearis</i>	3130 mg/l
<i>Daphnia</i>	649 mg/l		

13. DISPOSAL CONSIDERATIONS

Contaminated Packaging

In accordance with local and national regulations.

Waste from residues / unused products

In accordance with local and national regulations.

14. TRANSPORT INFORMATION

UN	Not regulated	IMO	Not regulated
Packing Group	Not regulated	ICAO	Not regulated
ADR / RID	Not regulated		

15. REGULATORY INFORMATION

The product is classified and labelled in accordance with EU directives for REACH and CLP. It is considered a non-hazardous substance¹

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification, since the conditions of the operations mentioned are beyond our control. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred using this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

¹ OECD HPV, ECETOC JACC Report No. 51, REACH Dissemination Report 2012