Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

1 Identification

· **Product identifier**

· **Trade name: MagReSyn® ZrO_2**
· **Other means of identification**

· **Product number:** MR-ZRD002 (2 ml); MR-ZRD005 (5 ml); MR-ZRD010 (2 x 5 ml)
· **Product Description:** Magnetic microparticles for phosphopeptide enrichment
· **Application of the substance / the mixture**
Magnetic microparticles suspended in an aqueous solution with ethanol. The product is intended for biomolecule (specifically phosphopeptide) immobilization for a variety of subsequent end-user applications in research and development. This product is for research and development use only.
· **Uses advised against**
It is not intended for any animal or human therapeutic or diagnostic use unless otherwise stated.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
ReSyn Biosciences Pty Ltd
Building 20
CSIR
Meiring Naude Road
Brummeria
Pretoria
South Africa
0184
+2763 358 5538
· **Emergency telephone number:** +2763 358 5538

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS02 Flame

Flammable liquids 2 H225 Highly flammable liquid and vapor.



GHS07

Eye irritation 2A H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS02 GHS07

· **Signal word** Danger
· **Hazard statements**
Highly flammable liquid and vapor.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Contd. on page 2)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 1)

Keep container tightly closed.
Ground / bond container and receiving equipment.
Use explosion-proof [electrical/ventilating/lighting] equipment.
Use non-sparking tools.
Take action to prevent static discharge.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO2, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Unknown acute toxicity:***
This value refers to knowledge of known, established toxicological or ecotoxicological values.
0 % of the mixture consists of component(s) of unknown toxicity.
· ***Information pertaining to particular dangers for man and environment:***
· ***Classification system:*** *NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme*
· ***NFPA ratings (scale 0 - 4)***



Health = 2
Fire = 3
Reactivity = 0

· ***HMIS-ratings (scale 0 - 4)***



Health = 2
Fire = 3
Reactivity = 0

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Classification according to (d)(1)(ii) of § 1910.1200***
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· ***Hazards not otherwise classified (HNOC)***
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/information on ingredients

· ***Chemical characterization: Mixtures***
· ***Description:*** *Mixture of the substances listed below with nonhazardous additions.*

· ***Dangerous components:***			
CAS: 64-17-5 *RTECS: KQ 6300000*	*Ethanol*	*Flammable liquids 2, H225; Eye irritation 2A, H319*	*10–30%*

· ***Additional information:***
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

(Contd. on page 3)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 2)

4 First-aid measures

· ***Description of first aid measures***
· ***General information:*** *If symptoms persist, call a physician.*
· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*
· ***After skin contact:***
Wash with soap and water.
If skin irritation occurs, consult a doctor.
· ***After eye contact:***
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
If eye irritation occurs, consult a doctor.
If easy to do so, remove contact lenses if worn.
· ***After swallowing:*** *If swallowed and symptoms occur, consult a doctor.*
· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***Indication of any immediate medical attention and special treatment needed*** *Treat symptomatically.*

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:*** *CO2, sand, extinguishing powder. Do not use water.*
· ***For safety reasons unsuitable extinguishing agents:*** *Water with full jet*
· ***Special hazards arising from the substance or mixture*** *Flammable liquid and vapour.*
· ***Advice for firefighters***
· ***Protective equipment:***
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
· ***Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers / surface or ground water.
· ***Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· ***Protective Action Criteria for Chemicals***
Protective Action Criteria (PACs) are essential components for planning and response to uncontrolled releases of hazardous chemicals.
· ***PAC-1:***
PAC 1: Mild, transient health effects.

64-17-5	*Ethanol*	*1,800 ppm*

· ***PAC-2:***
PAC 2: Irreversible or other serious health effects that could impair the ability to take protective action.

64-17-5	*Ethanol*	*3300* ppm*

· ***PAC-3:***
PAC 3: Life-threatening health effects.

64-17-5	*Ethanol*	*15000* ppm*

· ***Reference to other sections***
See Section 7 for information on safe handling.

(Contd. on page 4)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 3)

See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***Precautions for safe handling*** *No special precautions are necessary if used correctly.*
· ***Information about protection against explosions and fires:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Protect from heat.

· ***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 receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
· ***Specific end use(s)*** *No further relevant information available.*

8 Exposure controls/personal protection

· ***Control parameters***

· **Components with limit values that require monitoring at the workplace:**	
64-17-5 Ethanol	
PEL	Long-term value: 1900 mg/m³, 1000 ppm
REL	Long-term value: 1900 mg/m³, 1000 ppm
TLV	Short-term value: 1880 mg/m³ Long-term value: 1000 mg/m³

· ***Regulatory information***
PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)
TLV: Guide to Occupational Exposure Values (TLV)
· ***Additional information:*** *The lists that were valid during the creation of this SDS were used as basis.*

· ***Exposure controls***
Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Where acceptable concentrations cannot be maintained by general mechanical ventilation, local exhaust ventilation is recommended.
· ***Appropriate engineering controls*** *No further data; see section 7.*
· ***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 eyes.
· ***Breathing equipment:*** *Not required.*
· ***Protection of hands:***



Protective gloves

(Contd. on page 5)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 4)

· ***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

· ***Limitation and supervision of exposure into the environment*** *None*

9 Physical and chemical properties

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

· ***Physical state***	*Liquid*
· ***Color:***	*Black*
· ***Odor:***	*Slight*
· ***Odor threshold:***	*Not determined.*
· ***Melting point/Melting range:***	*Undetermined.*
· ***Boiling point/Boiling range:***	*Undetermined.*
· ***Flammability:***	*Highly flammable.*
· ***Explosion limits:***	
· ***Lower:***	*3.5 Vol %*
· ***Upper:***	*15 Vol %*
· ***Flash point:***	*16 °C (60.8 °F)*
· ***Auto igniting:***	*362.8 °C (685 °F)*
· ***Decomposition temperature:***	*Not determined.*
· ***pH-value:***	*Not determined.*
· ***Viscosity:***	
· ***Kinematic:***	*Not determined.*
· ***Dynamic:***	*Not determined.*
· ***Solubility in / Miscibility with***	
· ***Water:***	*Fully miscible.*
· ***Partition coefficient (n-octanol/water):***	*Not determined.*
· ***Vapor pressure at 20 °C (68 °F):***	*59 hPa (44.3 mm Hg)*
· ***Density:***	*Not determined.*
· ***Relative density***	*Not determined.*
· ***Vapor density***	*Not determined.*
· ***Particle characteristics***	*Not applicable.*

· ***Other information***
· ***Appearance:***

· ***Form:***	*Suspension*
· ***Important information on protection of health and environment, and on safety.***	
· ***Ignition temperature:***	*Product is not self-igniting.*
· ***Danger of explosion:***	*Product is not explosive. However, formation of explosive air/ vapor mixtures are possible.*

(Contd. on page 6)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 5)

· ***Solvent content:***
· ***Organic solvents:*** *20.0 %*
· ***VOC content:*** *20.00 %*
200.0 g/l / 1.67 lb/gal
· ***Solids content:*** *5.0 %*
· ***Change in condition***
· ***Oxidizing properties*** *None*
· ***Evaporation rate*** *Not determined.*

10 Stability and reactivity

· ***Reactivity***
The product is stable under normal conditions.
No further relevant information available.
· ***Chemical stability*** *Stable under normal conditions.*
· ***Thermal decomposition / conditions to be avoided:*** *No decomposition if used according to specifications.*
· ***Possibility of hazardous reactions*** *No dangerous reactions known.*
· ***Conditions to avoid*** *Heat, flame and ignition sources.*
· ***Incompatible materials:*** *No further relevant information available.*
· ***Hazardous decomposition products:*** *No dangerous decomposition products known.*

11 Toxicological information

· ***Information on toxicological effects***
· ***Acute toxicity:***

· ***LD/LC50 values that are relevant for classification:***		
64-17-5 Ethanol		
Oral	*LD50*	*7,060 mg/kg (Rat)* *Remarks: Lungs, Thorax, or Respiration: Other changes.* *Carcinogenicity - Mouse - Oral* *Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors.* *Blood: Lymphomas including Hodgkin's disease.* *Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.* *Heart - Irregularities - Based on Human Evidence* *Central nervous system - Breathing difficulties - Based on Human Evidence* *Stomach - Irregularities - Based on Human Evidence*
Inhalative	*LC50/4 h*	*20,000 mg/l (Rat)*
	LC50/96 hours	*12,900–15,300 Mg/l (trout)*

· ***Primary irritant effect:***
· ***on the skin:*** *No irritant effect.*
· ***on the eye:*** *Irritating effect.*
· ***Sensitization:*** *No sensitizing effects known.*
· ***Additional toxicological information:***
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
· ***Interactive effects*** *No interactive effects between components are known.*

(Contd. on page 7)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 6)

· ***Carcinogenic categories***
· ***IARC (International Agency for Research on Cancer)***
The IARC (the International Agency for Research on Cancer) concluded that ethanol found alcoholic beverages to be Group 1 - Carcinogenic to humans. All other instances it is not consider carcinogenic.
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

64-17-5	Ethanol	1

· ***NTP (National Toxicology Program)***
None of the ingredients is listed.

· ***OSHA-Ca (Occupational Safety & Health Administration)***
None of the ingredients is listed.

· ***Alternative sources for toxicological information*** *No non-standard sources for toxicological information were used.*

12 Ecological information

· ***Toxicity***

· ***Aquatic toxicity:***

64-17-5 Ethanol

EC50	34,900 mg/kg (daphnia)

· ***Persistence and degradability*** *No further relevant information available.*
· ***Bioaccumulative potential*** *No further relevant information available.*
· ***Mobility in soil*** *No further relevant information available.*
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects***
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (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.

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation:***
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.
· ***Waste disposal key:*** *US EPA RCRA waste code D001 (ignitability characteristic).*

· ***Uncleaned packagings:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleansing agent:*** *Water, if necessary with cleansing agents.*

14 Transport information

· ***UN-Number***
· ***DOT, IMDG, IATA*** *UN1170*
· ***UN proper shipping name***
· ***DOT, IATA*** *Ethanol*

(Contd. on page 8)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

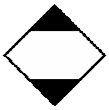
Trade name: MagReSyn® ZrO_2

(Contd. of page 7)

· **IMDG** ETHANOL (ETHYL ALCOHOL)
· **Transport hazard class(es)**

· **DOT**





Limited Quantity

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

· **IMDG, IATA**





Limited Quantity

· **Class** 3 Flammable liquids
· **Label** 3+ID8000
· **Packing group**
· **DOT, IMDG, IATA** II
· **Environmental hazards:** Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**
· **Quantity limitations** On passenger aircraft/rail: 5 L
On cargo aircraft only: 60 L

· **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

· **IATA**

(Contd. on page 9)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 Reviewed on 09/08/2025

Trade name: MagReSyn® ZrO_2

(Contd. of page 8)

· **Remarks:** Code: E1
Excepted Quantity Shipment

Code	Maximum Quantity (inner package)	Maximum Quantity per outer package
E0	Not permitted	Not permitted
E1	30g / 30ml	1Kg / 1L
E2	30g / 30ml	500g / 500ml
E3	30g / 30ml	300g / 300ml
E4	1g / 1ml	500g / 500ml
E5	1g / 1ml	300g / 300ml

· **Special precautions for user** Warning: Flammable liquids
· **Hazard identification number (Kemler code):** 33
· **EMS Number:** F-E,S-D
· **Stowage Category** A
· **UN "Model Regulation":** UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
64-17-5	Ethanol	ACTIVE

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

64-17-5	Ethanol

· **New Jersey Right-to-Know List:**

64-17-5	Ethanol

· **New Jersey Special Hazardous Substance List:**

64-17-5	Ethanol	CA, MU, TE, F3

· **Pennsylvania Right-to-Know List:**

64-17-5	Ethanol

(Contd. on page 10)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 9)

· ***Pennsylvania Special Hazardous Substance List:***
None of the ingredients is listed.

· ***Carcinogenic categories***

· ***EPA (Environmental Protection Agency)***
None of the ingredients is listed.

· ***TLV (Threshold Limit Value)***

64-17-5	*Ethanol*	*A3*

· ***NIOSH-Ca (National Institute for Occupational Safety and Health)***
None of the ingredients is listed.

· ***GHS label elements*** *The product is classified and labeled according to the Globally Harmonized System (GHS).*
· ***Hazard pictograms***



GHS02 GHS07

· ***Signal word*** *Danger*
· ***Hazard statements***
Highly flammable liquid and vapor.
Causes serious eye irritation.
· ***Precautionary statements***
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground / bond container and receiving equipment.
Use explosion-proof [electrical/ventilating/lighting] equipment.
Use non-sparking tools.
Take action to prevent static discharge.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO2, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· ***SDS created by:*** *Access GHS, LLC - 888-363-4870 - Team@access-ghs-sds.com*
· ***Date of previous version*** *03/04/2021*
· ***Version number of previous version:*** *1*
· ***Date of preparation*** *09/08/2025*
· ***Abbreviations and acronyms:***
IMDG: International Maritime Code for Dangerous Goods

(Contd. on page 11)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07.

Date of issue: 09/08/2025 *Reviewed on 09/08/2025*

Trade name: MagReSyn® ZrO_2

(Contd. of page 10)

DOT: US Department of Transportation
IATA: International Air Transport Association
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
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
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flammable liquids 2: Flammable liquids – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A