Material Safety Data Sheet

Prepared on: September 31/03/2015

MagReSyn® Protein A MAX

1. PRODUCT AND COMPANY IDENTIFICATION

Product code MR-PAM002 (2 ml); MR-PAM005 (5 ml); MR-PAM010 (2 x 5 ml)

Product name MagReSyn® Protein A MAX Microparticles

General Use MagReSyn® microparticles with immobilized Protein A suspended in an aqueous solution. The product is intended for biomolecule (specifically antibody) immobilization for a variety of subsequent end-user applications in research and development. This product is for research and development use only. It is not intended for any animal or human therapeutic or diagnostic use unless otherwise stated.

Manufacturer ReSyn Biosciences (Pty) Ltd
CSIR
Building 20
Meiring Naude Road
Brummeria
Pretoria
0184
South Africa

Contact for additional information: Dr. Isak B. Gerber;
Tel: +2712 841 4153;
Email: igerber@resynbio.com

2. COMPOSITION

Hazardous/Non-hazardous Components

Chemical Name	CAS #	Weight %
MagReSyn® Protein A MAX Microparticles	-------	1.5%
Tris	77-86-1	<1% (50 mm)
Sodium Chloride	7647-14-5	<1% (150 mm)
Tween® 20	9005-64-5	0.025%
Sodium azide	26628-22-8	0.05%
Water	7732-18-5	~99%

3. HAZARDS IDENTIFICATION

GHS Classification: ACUTE TOXICITY, Category 5: **Warning**

SKIN IRRITATION/CORROSION, Category 2: **Warning**

SERIOUS EYE DAMAGE/IRRITATION, Category 2 **Warning**

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE), Category 3: **Warning**

Signal Words: WARNING

GHS Hazard Statements: HEALTH HAZARDS:
Causes skin and eye irritation.
May be harmful if swallowed.
May cause irritation of respiratory tract.

ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

GHS Precautionary Statements: PREVENTION:
Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
Keep container tightly closed.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

RESPONSE:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Induce vomiting only if directed to by medical personnel.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
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 dry chemical, foam or other appropriate extinguishing media.

STORAGE:
Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

DISPOSAL:
Dispose of contents and container to appropriate waste site or reclaimed in accordance with local and national regulations.

GHS Label Elements Symbol(s):

Form Solid in an aqueous formulation

HMIS

Health	1
Flammability	0
Reactivity	0

4. FIRST AID MEASURES

Skin contact Wash or flush skin immediately and thoroughly with soap and water, If irritation develops, seek medical attention.

Eye contact Flush for 15 minutes thoroughly with plenty of water; seek medical attention.

Ingestion If ingested contact a physician; do not give anything by mouth to an unconscious person. Transport to nearest medical facility for additional treatment. Do not induce vomiting.

Inhalation Move to fresh air. If breathing becomes difficult, seek medical aid.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

In the event of fire, responders should follow appropriate protective measures to prevent skin contact and inhalation.

Suitable extinguishing media
Dry chemical, foam or other appropriate extinguishing media.

6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations. Avoid contact with spilled or released material.

Personal precautions	In the event of a spill or leak, use personal protective equipment to minimize contact with skin. Keep away from heat, sparks and open flame. Provide sufficient ventilation.
Methods for cleaning up	Clean up spill immediately using an inert absorbent material; dispose of according to applicable local, regional, or federal regulations.

7. HANDLING AND STORAGE

Handling	Avoid dust formation; avoid contact with skin and eyes. Avoid breathing vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources. Do not eat; drink or smoke while handling.
Storage	Keep in properly labeled containers. Store in ventilated room or shade below 27°C (80°F) and away from direct sunlight. Follow all precautionary information on container label. Keep away from oxidizing agents, reducing agents, acids, alkalis, and moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (ceiling)	ACGIH TLV	MAK
MagReSyn® Protein A MAX Microparticles	None	None	None	None
Tris	None	None	None	None
Sodium Chloride	None	None	None	None
Tween 20	None	None	None	None
Sodium Azide	Vacated	None	(Ceiling) 0.29 mg/m^3 as NaN_3 (Ceiling) 0.11 ppm as HN_3 vapor	0.2 mg/m^3

Engineering measures Ensure adequate fresh air ventilation is available, especially in confined areas; use local exhaust ventilation.

Personal protective equipment

Respiratory protection In case of insufficient ventilation, wear particulate respiratory protection.

Hand protection Use protective gloves to prevent unnecessary skin contact

Eye protection Use safety glasses with side-shields or safety goggles.

Skin and body protection Lightweight protective clothing.

Hygiene measures Handle in accordance with good laboratory hygiene practices.

Environmental exposure controls Prevent product from entering drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

	MagReSyn® Protein A MAX Microparticles	Tris	Sodium Chloride	Tween 20	Sodium Azide
Physical form	Solid in aqueous media	Transparent crystals	Solid	Liquid	Solid
Color	Black	Transparent	White	No data available	No data available
Odor	None	Slight characteristic odor	Odorless	No data available	No data available
Boiling Point	No data available	219-220° C (426-428°F)	1461° C (2662° F)	No data available	No data available
Melting Point	No data available	171-172° C (340-342° F)	801° C (1474° F)	No data available	Decomposes
Flash Point	No data available	Not applicable	Not applicable	232° C (550° F)	No data available
Auto ignition temperature	No data available	Not applicable	Not applicable	No data available	No data available
Oxidizing properties	No data available	No data available	No data available	Strong oxidizing agent	No data available
Water Solubility	No data available	550 mg/mL	360000 mg/L	soluble	420 mg/mL
pH	No data available	7.5	5-8	7	No data available
Specific Gravity	No data available	No data available	2.165	1.095	1.85
Viscosity	No data available	No data available	No data available	Not available	No data available
Flammability	No data available	No data available	No data available	Not available	No data available
Vapor Density (air =1)	Not applicable	No data available	No data available	<1.33 hPa	No data available
Vapor pressure	No data available	No data available	No data available	No data available	No data available
Lower/upper explosive limit	No data available	No data available	No data available	No data available	No data available
Decomposition temperature	No data available	No data available	No data available	No data available	No data available

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use.
Materials to avoid	None known.
Hazardous decomposition products	None expected under normal use conditions.
Polymerization	Hazardous polymerization is not known to occur.

11. TOXICOLOGICAL INFORMATION

Chemical Name	LD50 (oral)	LD50 (dermal)	LC50 (inhalation)
MagReSyn® Protein A MAX Microparticles	No data available	No data available	No data available
Tris	Low toxicity	Low toxicity	Low toxicity
Sodium Chloride	Low/moderate toxicity. LD50: 3450-7060 mg/kg (rat)	Low toxicity	Expected to be of low toxicity if inhaled. LC50: 20,000-20,363 mg/kg (rat)
Tween 20	40554 mg/kg (rat)	No data available	No data available
Sodium Azide	27 mg/kg (mouse)	20 mg/kg (rabbit)	No data available

Principle Routes of Exposure/ Potential Health effects

Eyes May cause eye irritation in the event of contact.

Skin May cause skin irritation and/or dermatitis on contact; not a skin sensitizer.

Inhalation May cause irritation of respiratory tract if vapor is inhaled. Inhalation of high concentrations may cause effects to the central nervous system.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Specific Effects

Carcinogenic effects	No known significant effects or critical hazards.
Mutagenic effects	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effect or critical hazards.
Sensitization	No known significant effects or critical hazards.
Target Organ Effects	No known significant effects or critical hazards.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects No known significant effects or critical hazards.

Mobility No known significant effects or critical hazards.

Biodegradation No known significant effects or critical hazards.

Bioaccumulation No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, regional, or federal regulations. Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.

Do not dispose down drain. Sodium azide is very reactive or incompatible with metals.

14. TRANSPORT INFORMATION

Proper shipping name None
US DOT Non-hazardous for transport
IATA Non-hazardous for air transport

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	PICCS	ENCS	DSL	NDSL	AICS
MagReSyn® Protein A MAX Microparticles	------	------	-------	-------	-----	-----
Tris	Yes	Yes	Yes	Yes	No	Yes
Sodium Chloride	Yes	Yes	Yes	Yes	No	Yes
Tween 20	Yes	Yes	Yes	Yes	No	Yes
Sodium Azide	Yes	Yes	Yes	Yes	No	Yes

International Agency for Research on Cancer
None of the ingredients has been listed

National Toxicology Program
None of the ingredients has been listed

U.S. Federal Regulations

SARA 313
This product is not regulated under SARA.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain HAPs.

California Proposition 65
This product does not contain any known carcinogens or reproductive toxicants.

16. OTHER INFORMATION

R-phrase(s)
R38 Irritating to skin.
R41 Risk of serious damage to eyes.

S-phrase(s)
S-2 Keep out of the reach of children.
S-7 Keep container tightly closed.
S-9 Keep container in a well-ventilated place.
S-16 Keep away from sources of ignition - No Smoking.

This material is sold for research and development purposes only. It is not intended for food, drug, household, agricultural, or cosmetic use. An individual technically qualified to handle potentially hazardous chemicals must supervise the use of this material.

This information is based on our present knowledge and is subject to revision.