



## Material Safety Data Sheet

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### SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY / UNDERTAKING – CHEMICAL PRODUCT & COMPANY IDENTIFICATION

**Trade Name:** PureProteome™ Protein G Magnetic Beads  
**Catalogue Number(s):** LSKMAGG02, LSKMAGG10  
**Chemical Name:** A suspension of protein G covalently bound to proprietary amorphous silica beads in aqueous benzyl alcohol.  
**Product use:** Biological research reagent.  
**Other trade names and synonyms:** None  
**Manufacturer/Distributor:** Millipore Corporation (Corporate Headquarters)      Millipore S.A.S. (European Headquarters)  
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### SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	Symbol letters**	R Phrases***
Proprietary magnetic beads with recombinant Protein G covalently bound to silica.	Unlisted	63231-67-4	5-20%	None	None
Benzyl alcohol	202-859-9	100-51-6	0.3-1.3%	Xn	R20/22
Water	231-791-2	7732-18-5	Remainder	None	None

\*EINECS and CAS numbers for base amorphous silica.

\*\* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **Xi** = Irritant, **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

\*\*\* The full text of each phrase is listed in Section 16.

### SECTION 3 HAZARD IDENTIFICATION / EMERGENCY OVERVIEW

<b>Appearance:</b>	Brown suspension
<b>Classification:</b>	These products are not classified according to Directive 1999/45/EC.
<b>Adverse human health effects:</b>	
<b>Contact with Eyes:</b>	Possible eye irritant. Severe contact with the eyes may cause physical damage to the eyes
<b>Ingestion:</b>	Possible gastrointestinal tract irritant, accompanied by nausea and vomiting.
<b>Inhalation (Short Term):</b>	Possible respiratory tract irritant.
<b>Inhalation (Long Term):</b>	Prolonged or repeated exposure to amorphous silica may cause permanent injury to the lungs.
<b>Skin Contact:</b>	Possible skin irritant. Severe contact with the skin may cause drying of the skin.
<b>Target Organs:</b>	Silica: lungs
<b>Medical conditions aggravated by exposure:</b>	Persons with pre-existing respiratory diseases may be especially sensitive to irritation by silica particles.
<b>Adverse environmental effects:</b>	Products containing in the range of 1% benzyl alcohol are expected to be mildly toxic to aquatic organisms. See section 12 for detailed information.
<b>Adverse physiochemical effects:</b>	None expected.

### SECTION 4 FIRST AID MEASURES

<b>Contact with Eyes:</b>	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. If irritation persists, seek immediate medical attention.
<b>Ingestion:</b>	If victim is conscious and alert, give plenty of water. If unconscious, give nothing by mouth and seek medical attention for victim.
<b>Inhalation:</b>	Remove exposed person to fresh air immediately. If breathing is difficult, administer oxygen. If victim is not breathing, administer artificial respiration. Get medical attention.
<b>Skin Contact:</b>	Wash exposed skin with soap and water while removing contaminated clothing and shoes. Seek medical attention if irritation develops or persists. Launder contaminated clothing before wearing.

## SECTION 5 FIRE FIGHTING MEASURES

<b>Flash Ignition Temperature:</b>	None; Not considered to be a fire hazard.
<b>Autoignition Temperature (ASTM D1929):</b>	None applicable.
<b>Flammability Limits:</b>	Not applicable.
<b>Suitable extinguishing media:</b>	Employ extinguishing media suitable for the surrounding fire.
<b>Unsuitable extinguishing media:</b>	None reported.
<b>Special protective equipment for firefighters:</b>	None required.
<b>Special exposure hazards:</b>	None expected.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Area evacuation is not required. Eliminate unnecessary traffic in area of the spill. Wear chemically resistant boots, clothing and gloves (nitrile, neoprene) to prevent skin contact.
<b>Small spills:</b>	Clean up spills immediately. Wear appropriate protective clothing and if necessary breathing apparatus if aerosols are present. Contain spill and absorb with sand, earth, or vermiculite. Collect residues and place in labeled plastic containers. Avoid breathing aerosols and contact with skin and eyes.
<b>Large spills:</b>	In addition to Small Spill precautions, clear area of all unnecessary personnel and move upwind, if aerosol formation is possible.
<b>Environmental precautions:</b>	May be discharged into sewer, or industrial waste water systems if allowed by local regulations. Otherwise, collect and dispose according to federal, state and local regulations.
<b>Clean up measures:</b>	Small spills may be adsorbed on paper towels, and stored in closed containers pending final disposition. Larger spill may be absorbed in sand, sawdust or vermiculite, and stored in closed containers pending final disposition (See section 13). Wash spill area with detergent and water to remove residual contamination. This water may be disposed to the sanitary sewer.

## SECTION 7 HANDLING AND STORAGE

<b>Handling:</b>	Avoid contact with eyes and skin. Wear gloves. Do not inhale aerosols. May be harmful if swallowed. Use personal protective equipment outlined in section 8. Wash thoroughly after handling Use with adequate ventilation
<b>Storage:</b>	Store at room temperature, unless directed otherwise by the product data sheet

## SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

	Normal Handling Conditions	Emergency Response Conditions
<b>Respiratory protection:</b>	Not normally required for normal use.	If aerosols are present - air purifying respirator with particulate cartridges
<b>Ventilation:</b>	General room ventilation	If aerosols are present, provide exhaust ventilation
<b>Eye protection:</b>	Safety glasses with side shields	Chemical splash goggles.
<b>Skin protection:</b>	Nitrile gloves and laboratory coat.	Chemically resistant jacket, pants, gloves, boots and head covering

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Brown suspension
<b>Odor:</b>	Very faint aromatic.
<b>Odor Threshold:</b>	Benzyl alcohol: 5.5 ppm.
<b>pH:</b>	8.5
<b>Melting Point:</b>	-1 to -3°C
<b>Boiling Point:</b>	101 to 103°C
<b>Flash Ignition Point:</b>	None; Not considered to be a fire hazard.
<b>Explosive Properties:</b>	Not considered to be an explosion hazard.
<b>Oxidizing Properties:</b>	Not considered to have oxidising properties.
<b>Vapor pressure, 20 °C:</b>	<1 mm Hg
<b>Specific Gravity (Water = 1.0):</b>	Approximately 1.1
<b>Solubility</b>	Beads are insoluble in water
<b>Vapor Density, 20 °C:</b>	Not applicable
<b>Viscosity, centipoise:</b>	Not available
<b>Partition coefficient (n-octanol/water):</b>	12.6

## SECTION 10 STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable under normal temperatures and pressures
<b>Conditions to Avoid:</b>	Elevated temperature, heating to dryness.
<b>Incompatible With:</b>	Strong hydrofluoric acid solutions.
<b>Hazardous Decomposition Products:</b>	Silica aerosols, carbon monoxide and carbon dioxide.
<b>Hazardous Polymerization:</b>	Will not occur

## SECTION 11 TOXICOLOGICAL INFORMATION

- Inhalation:** May cause respiratory tract. Prolonged or repeated exposure to amorphous silica may cause permanent injury to the lungs.
- Ingestion:** May cause gastrointestinal tract irritation, accompanied by nausea and vomiting.
- Skin Contact:** May cause skin irritation. Repeated or prolonged contact with the skin may cause drying of the skin.
- Eye Contact:** May cause eye irritation. Repeated or prolonged contact with the eyes may cause physical damage to the eyes
- Carcinogenicity:** None of the components of these products are listed as carcinogenic by ACGIH, IARC, NTP, OSHA or California proposition 65.
- Chronic Toxicity:** Prolonged or repeated exposure to amorphous silica may cause permanent injury to the lungs.
- Toxicology Data:** Toxicological information for this product as a whole does not exist;  
Selected data for the individual components:

Compound: <b>Amorphous Silica</b> (100%)	RTECS#: <b>VV7340000</b>
Lowest published toxic concentration, inhalation, rat: 5 day, intermittent	5 mg/m <sup>3</sup>

Compound: <b>Benzyl Alcohol</b> (100%)	RTECS#: <b>DN3150000</b>
LD <sub>50</sub> , oral, rat:	1,230 mg/kg
LC <sub>50</sub> , inhalation, rat:	>500 mg/m <sup>3</sup>
LD <sub>50</sub> , skin, rabbit	2,000 mg/kg
Draize test, rabbit, skin: 100 mg/24H	Moderate
Draize test, rabbit, skin: 16 mg/48H	Mild

Benzyl alcohol has been investigated as a mutagen.

## SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity: - calculated for a 1% by weight aqueous benzyl alcohol solution

LC<sub>50</sub> Fathead Minnow 4.6 gm product/liter.

EC<sub>50</sub>, *Daphnia magna* 40 gm product/liter.

Environmental Fate: The silica based beads are expected to be inert in contact with soils and natural waters, and to show little tendency to bioaccumulate. Benzyl alcohol is expected to be biodegraded at a moderately rapid rate under both aerobic and anaerobic conditions.

## SECTION 13 DISPOSAL INFORMATION

These products may be disposed to an industrial sewer system if permitted by local regulation, and must be disposed in a manner consistent with national, state, and local regulations.

**European Community:** When disposal is required, this product be considered according to the European Waste catalogue (European commission decision of 03/05/01 modifying directives 94/3/CE and 75/442/CE) as part of the following category:

**16 10 01\* aqueous liquid wastes containing dangerous substances**

**United States:** These products do not may meet the definition of a US Environmental Protection Agency RCRA hazardous waste. Unused product should be disposed of in a manner consistent with federal, state and local regulations.

## SECTION 14 TRANSPORTATION INFORMATION

The transportation of these products is not regulated by IMDG (sea), ADR (road), RID (rail), ICAO/IATA (air), or USDOT as a dangerous goods or hazardous material.

## SECTION 15 REGULATORY INFORMATION

<b>Australia:</b>	Hazchem Code:	None Allocated
	Poisons Schedule Number:	None Allocated
<b>California:</b>	No Significant Risk Level:	None of the chemicals in these products are known to Millipore Corporation to be listed.
<b>Canada:</b>	WHMIS:	These products have WHMIS classifications of Unclassified.
<b>European Community:</b>	Symbols:	None
	Category of danger:	None
	Risk phrases:	None
	Safety phrases:	S2 Keep out of the reach of children. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	OECD/High Production Volume (HPV) chemicals:	Benzyl alcohol is listed as a High Volume Production chemical.
	WEEE and RoHS:	The WEEE and RoHS Directives are not applicable to these products.
<b>Japan:</b>	Poisonous and Deleterious Substances Control Law:	None of the components of these products are listed under the Poisonous and Deleterious Substances Control Law

## Section 15 – Regulatory Information (continued)

<b>United States</b>	Toxic Substances Control Act:	One or more of the components of these products are not listed on the EPA Toxic Substances Control Act (TSCA) Inventory. In the United States, their use is restricted to research and development or FDA regulated activities
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**Occupational Exposure Limits**

<b>Component</b>	<b>Occupational Exposure Limits, mg/m<sup>3</sup></b>	
Silica, Amorphous, synthetic	ACGIH TLV, EU IOELV, Japan OEL NIOSH REL, US OSHA PEL,	None Established.
Benzyl alcohol	ACGIH TLV, EU IOELV, Japan OEL NIOSH REL, US OSHA PEL,	None Established

## SECTION 16 ADDITIONAL INFORMATION

Risk phrases referred to under Section 2:

R20/22 Harmful by inhalation and if swallowed.

### Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
IUCLID	International Uniform Chemical Information Database
LC <sub>50</sub>	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD <sub>50</sub>	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LDLo	Lowest observed lethal dose
MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)

Section 16 Abbreviations (continued)

OSHA	United States Occupational Safety and Health Administration
REL	Recommended Exposure Limit
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
VLE	15 minute short term exposure limit (France)
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of European Community Directive 2001/58/EC and ANSI Z400.1-1998.

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