

SAFETY DATA SHEET

Product Identifier: Metal-Conjugated Proteins
Catalog ID number: 3000000X-3999999X (stand-alone)
(Includes Panel Kits within the following range of Catalog numbers: 201302-2013XX)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Contact information

General	Fluidigm Corporation 7000 Shoreline Court Suite 100, South San Francisco, CA 94080 Main (US): +1 (650) 266-6000 Email: techsupport@fluidigm.com
Emergency telephone number	+ (650) 266-6100 (outside US) + (866) 358-4354 (toll-free)

Product identifier	Metal-Conjugated Proteins
Synonyms	None identified
Trade names	None identified
Chemical family	Mixture; contains sodium azide
Relevant identified uses of the substance or mixture and uses advised against	For research use only. Not for use in diagnostic procedures.
Note	This SDS is written to address potential health and safety issues associated with the handling of the formulated product.
Issue date	25 June 2015

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System [GHS]	Not classified
AU hazard classification (NOHSC)	Hazardous substance. Non-hazardous goods.

Label elements

CLP/GHS hazard pictogram	None required
CLP/GHS signal word	None required
CLP/GHS hazard statements	None required
CLP/GHS precautionary statements	None required

Other hazards	Mixture; contains sodium azide. The most common adverse effects reported with exposure to sodium azide include dizziness, headache, nausea and vomiting, rapid breathing and heart rate, restlessness, weakness, runny nose, cough, and red eyes. Overexposure to sodium azide may cause convulsions, low blood pressure, loss of consciousness, lung injury, reduced heart rate, and potentially fatal respiratory failure. Inhalation of sodium azide may cause respiratory irritation.
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Note This mixture is not classified as hazardous according to Regulation EC No 1272/2008 (EU CLP) and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological and ecological properties of this mixture have not been fully characterized.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No.</u>	<u>EINECS/ ELINCS No.</u>	<u>Amount</u>	<u>GHS Classification</u>
Sodium azide	26628-22-8	247-852-1	0.05%	ATO2: H300; AA1: H400; CA1: H410; EUH032
Glycerol	56-81-5	200-289-5	50%	No data available

Note The ingredients listed above are considered hazardous. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

SECTION 4: FIRST-AID MEASURES

Description of first-aid measures

Immediate medical attention needed	Yes
Eye contact	If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.
Skin contact	Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.
Inhalation	Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.
Ingestion	Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.
Protection of first-aid responders	See Section 8 for Exposure Controls/Personal Protection recommendations.
Most important symptoms and effects, both acute and delayed	See Sections 2 and 11.
Indication of immediate medical attention and special treatment needed, if necessary	Contains low levels of sodium azide. Medical conditions aggravated by exposure: none known or reported. Treat symptomatically and supportively.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media	Use water spray (fog), foam, dry powder, or carbon dioxide as appropriate for surrounding fire and materials.
Specific hazards arising from the substance or mixture	No information identified. May emit nitrogen-containing compounds.
Flammability/explosivity	No information identified

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Advice for firefighters Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated. Do not breathe mist/vapors/spray.

Environmental precautions Do not empty into drains. Avoid release to the environment.

Methods and material for containment and cleaning up If vials are crushed or broken, DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, for example, paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.

Reference to other sections See Sections 8 and 13 for more information.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling Avoid breathing vapor or mist. Do not permit eating/drinking/smoking near this material. All materials used for transferring or preparing this product must be considered contaminated and disposed of properly.

Conditions for safe storage including any incompatibilities Store at 4 °C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled.

Specific end uses No information identified

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Note Dispose of broken vials/syringes in a sharps container.

Control Parameters/occupational exposure limit values

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Sodium azide	ACGIH, Australia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, US-California OSHA, United Kingdom	OEL-STEL	0.3 mg/m ³
	New Zealand, Portugal	Ceiling	0.29 mg/m ³

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	ACGIH, Australia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, US-California OSHA, United Kingdom	OEL-TWA	0.1 mg/m ³
	NIOSH, US-California OSHA	Ceiling	0.3 mg/m ³
	Germany	OEL-STEL	0.4 mg/m ³
	Germany	OEL-TWA	0.2 mg/m ³

<u>Compound</u>	<u>Britain EH40</u>	<u>France VL</u>	<u>Europe</u>
Glycerol	TWA: 10 mg/m ³	TWA: 10 mg/m ³	No data
	OSHA TWA PEL: 15 (dust); 5 (resp.) mg/m ³	ACGIH TWA TLV: 10 mg/m ³	Other Limits No data

Exposure/engineering controls

If handling bulk product or vials are opened/crushed/broken: Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at aerosol/mist-generating points. Emphasis is to be placed on closed material transfer systems and process containment, with limited open handling. High-energy operations should be done within an approved emission control or containment system.

Respiratory protection

If handling bulk product or vials are opened/crushed/broken: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. For routine powder handling tasks, an approved and properly fitted air purifying respirator should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls.

Hand protection

Wear nitrile or other impervious gloves if skin contact is possible. When the material is diluted in an organic solvent, wear gloves that provide protection against the solvent.

Skin protection

Wear appropriate gloves, lab coat, or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact, and solvents and reagents in use.

Eye/face protection

Wear safety glasses with side shields, chemical splash goggles, or full face shield if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

Environmental exposure controls

Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

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Other protective measures Wash hands in the event of contact with this product/mixture, especially before eating, drinking, or smoking. Protective equipment is not to be worn outside the work area (for example, in common areas or out-of-doors).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear liquid
Color	Colorless
Odor	Odorless
Odor threshold	No information identified
pH	No information identified
Melting point/freezing point	No information identified
Initial boiling point and boiling range	No information identified
Flash point	No information identified
Evaporation rate	No information identified
Flammability (solid, gas)	No information identified
Upper/lower flammability or explosive limits	No information identified
Vapor pressure	No information identified
Vapor density	No information identified
Relative density	No information identified
Water solubility	Fully soluble in water
Solvent solubility	No information identified
Partition coefficient (n-octanol/water)	No information identified
Auto-ignition temperature	No information identified
Decomposition temperature	No information identified
Viscosity	No information identified
Explosive properties	No information identified
Oxidizing properties	No information identified

Other information

Molecular weight	Not applicable (mixture)
Molecular formula	Not applicable (mixture)

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SECTION 10: STABILITY AND REACTIVITY

Reactivity	Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.
Chemical stability	Stable
Possibility of hazardous reactions	No information identified
Conditions to avoid	Keep away from strong oxidizing agents.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	May form carbon dioxide and carbon monoxide, metal oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Route of entry May be absorbed by inhalation, skin contact, and ingestion.

Acute toxicity

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Sodium azide	LD50	Oral	Rat	27 mg/kg
	LD50	Oral	Mouse	27 mg/kg
	LD50	Dermal	Rabbit	20 mg/kg
Glycerol	LD50	Oral	Rat	12,600 mg/kg
	LD50	Dermal	Rabbit	10,000 mg/kg

Irritation/Corrosion No studies identified

Sensitization No studies identified

STOT; single exposure No studies identified

STOT; repeated exposure/repeat-dose toxicity No studies identified

Reproductive toxicity No studies identified

Developmental toxicity No studies identified

Genotoxicity No studies identified

Carcinogenicity No studies identified. This mixture is not listed by NTP, IARC, ACGIH, or OSHA as a carcinogen.

Aspiration hazard No data available

Human health data See "Other hazards" in Section 2

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Sodium azide	LC50/96 hr	<i>Oncorhynchus mykiss</i>	0.8 mg/L
	LC50/96 hr	<i>Lepomis macrochirus</i>	0.7 mg/L
	LC50/96 hr	<i>Pimephales promelas</i>	5.46 mg/L

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Glycerol	LC ₅₀ /96 hr	<i>Oncorhynchus mykiss</i>	51-57 mL/L
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Additional toxicity information Sodium azide is toxic to aquatic organisms and should not be allowed to accumulate in metal piping because it has the potential to form explosive mixtures.

Persistence and degradability No data identified

Bioaccumulative potential No data identified

Mobility in soil No data identified

Results of PBT and vPvB assessment Not performed

Other adverse effects No data identified

Note The environmental characteristics of this product/mixture have not been fully investigated. The above data are for the active ingredient and/or any other ingredients where applicable. Although present at low concentrations, disposal should consider that sodium azide is present. Releases to the environment should be avoided.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods Dispose of wastes in accordance with prescribed federal, state, and local guidelines, for example, in an appropriately permitted chemical waste incinerator. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, for example, in an appropriately permitted municipal or onsite wastewater treatment facility.

SECTION 14: TRANSPORT INFORMATION

Transport Based on the available data, this mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.

UN number None assigned

UN proper shipping name None assigned

Transport hazard classes and packing group None assigned

Environmental hazards Based on the available data, this mixture is not regulated as an environmental hazard or a marine pollutant.

Special precautions for users No special precautions needed. Avoid release to the environment.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

Hazchem Code/HIN None assigned

SECTION 15: REGULATORY INFORMATION

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Safety, health, and environmental regulations/legislation specific for the substance or mixture	This SDS complies with the requirements under US, EU, and GHS (EU CLP, Regulation EC No. 1272/2008) guidelines. Consult your local/regional authorities for more information.
Chemical safety assessment	Not conducted
WHMIS classification	Not classified
TSCA status	Not listed
SARA section 313	Not listed
California proposition 65	Not listed
Component analysis: state	Sodium azide is listed as hazardous in CA, HI, MA, MN, NJ, PA, RI, VT, and WA.
Component analysis: chemical inventory	Sodium azide is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, Japan, New Zealand, and the Philippines.
Additional information	No other information identified

SECTION 16: OTHER INFORMATION

NFPA ratings	Sodium azide Health: 3 Fire: 0 Reactivity: 2 Glycerol Health: 1 Fire: 0 Reactivity: 0
Full text of H phrases and GHS classifications	ATO2: Acute Toxicity (Oral) Category 2. H300: Fatal if swallowed. AA1: Acute aquatic toxicity Category 1. H400: Very toxic to aquatic life. CA1: Aquatic toxicity (chronic) Category 1. EUH032: Contact with acids liberates very toxic gas.
Sources of data	Information from published literature and internal company data
Abbreviations	ACGIH, American Conference of Governmental Industrial Hygienists; ADR/RID, European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA, American Industrial Hygiene Association; AU, Australia; CA, California; CAS No., Chemical Abstract Services Number; CLP, Classification, Labelling, and Packaging of Substances and Mixtures; DNEL, derived no-effect level; DOT, Department of Transportation; EH, environmental hygiene; EINECS, European Inventory of New and Existing Chemical Substances; ELINCS, European List of Notified Chemical Substances; EU, European Union; GHS, Globally Harmonized System of Classification and Labelling of Chemicals; HI, Hawaii; HIN, hazard identification number; IARC, International Agency for Research on Cancer; IBC, international bulk chemical; IDLH, immediately dangerous to life or health; IATA, International Air Transport Association; IMDG, International Maritime Dangerous Goods; LOEL, lowest observed effect level; LOAEL, lowest observed adverse effect level; MA, Massachusetts; MARPOL, International Convention for the Prevention of Pollution from Ships; MN, Minnesota; NFPA, National Fire Protection Association; NJ, New Jersey; NIOSH, The National Institute for Occupational Safety and Health; NOAEL, no observed adverse effect level; NOEL, no observed effect level; NOHSC, National Occupational Health and Safety Commission; NTP, National Toxicology Program; OEL, Occupational Exposure Limit; OSHA, Occupational Safety and Health Administration; PA, Pennsylvania; PBT, persistent, bioaccumulative, toxic; PEL, permissible exposure limit; PNEC, predicted no effect concentration; RI, Rhode Island; SARA, Superfund Amendments and Reauthorization Act; STEL, short-term exposure limit; STOT, specific target organ toxicity; TDG, Transportation of Dangerous Goods; TLV, threshold limit value; TSCA, Toxic Substances Control Act; TWA, time-weighted average; VL, valeurs limites d'exposition professionnelle aux agents chimiques en France; vPvB, very persistent, very bioaccumulative; VT, Vermont; WA, Washington; WHMIS, Workplace Hazardous Materials Information System



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Revisions

This is the sixth version of this SDS.

Disclaimer

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