

SAFETY DATA SHEET

Product Identifier: Biomark™ 24.192 GE Reagent Kit—10 IFCs
Catalog ID numbers: 101-7591, 101-7592, 101-7660, 101-7747

SDS ID: 101-7859 Revision A1

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 (U.S.): +1 (650) 266-6000 E-mail: techsupport@fluidigm.com
Emergency telephone number	+ (650) 266-6100 (outside US) + (866) 358-4354 (toll free)

Product identifier	Biomark™ 24.192 GE Reagent Kit—10 IFCs
Synonyms	None identified
Trade names	None identified
Chemical family	Mixture – bovine serum albumin
Relevant identified uses of the substance or mixture and uses advised against	<i>For Research Use Only. Not for use of diagnostic procedures.</i>
Note	This SDS is written to address potential health and safety issues associated with the handling of the formulated product.

SECTION 2 - HAZARDS IDENTIFICATION

This product contains eight (8) parts. The following provides the hazard classification for each part.

Part 1: 20x GE Sample Loading Reagent (Part #: 85000746)

Classification of the substance or mixture

Globally Harmonized System [GHS] Skin sensitizer - Category 1. Respiratory sensitizer - Category 1.

Label elements

GHS hazard pictogram



GHS signal word

Danger

GHS hazard statements

H317 - May cause allergic skin reaction. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS precautionary statements

P261 - Avoid breathing mist or vapor. P272 - Contaminated work clothing should not be allowed out of the workplace. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician. P362 + P364 - Take off contaminate clothing and wash it before reuse. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards

Mixture - contains bovine serum albumin. May cause respiratory sensitization. Part/mixture not yet fully tested.

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Note This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological, and ecological properties of this part/mixture have not been fully characterized.

Part description and number	GHS Hazard Classification
Part 2: Tube, PreAmp Master Mix (100-5744)	None required.
Part 3: Tube, PCR Water (100-5941)	None required.
Part 4: Tube, Reverse Transcription Master Mix (100-6297)	None required.
Part 5: Tube, Actuation Fluid (100-6250)	None required.
Part 6: Bottle, Pressure Fluid (100-6249)	None required.
Part 7: Tube, 2X Assay Loading Reagent (85000736)	None required.
Part 8: 24.192 Control Line Fluid Kit – 2 IFC (101-7602)	None required.

Other hazards Parts of the kit may cause irritation. Part/mixture not yet fully tested.

Note Parts 2-8 are not classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological, and ecological properties of this part/mixture have not been fully characterized.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Part 1: 20x GE Sample Loading Reagent (Part #: 85000746)

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Bovine serum albumin	9048-46-8	N/A	5-10%	SS1: H317; RS1: H334

Note Bovine serum albumin is 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.

Part 2-8

<u>Tube Description</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Part 2: Tube, PreAmp Master Mix (Part #: 100-5744)	N/A (mixture)	N/A	~100%	Not classified
Part 3: Tube, PCR Water (Part #: 100-5941)	N/A (mixture)	N/A	~100%	Not classified
Part 4: Tube, Reverse Transcription Master Mix (Part #: 100-6297)	N/A (mixture)	N/A	~100%	Not classified
Part 5: Tube, Actuation Fluid (Part #: 100-6250)	N/A (mixture)	N/A	~100%	Not classified
Part 6: Bottle, Pressure Fluid (Part #: 100-6249)	N/A (mixture)	N/A	~100%	Not classified
Part 7: Tube, 2X Assay Loading Reagent (Part #: 85000736)	N/A (mixture)	N/A	~100%	Not classified
Part 8: 24.192 Control Line Fluid Kit – 2 IFC (Part #: 101-7602)	N/A (mixture)	N/A	~100%	Not classified

Note The components within Parts 2-8 are non-hazardous and/or present at amounts below reportable limits.

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.

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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	Certain parts of the kit contain low levels of bovine serum albumin. 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 carbon monoxide, carbon dioxide, oxides of nitrogen and sulfur, metal-containing compounds, and other nitrogen-, sulfur- or fluorine-containing compounds.
Flammability/Explosivity	No information identified.
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, e.g., 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 dust/mist/vapor/spray. Do not permit eating/drinking/smoking near this material.
Conditions for safe storage including any incompatibilities	Store in a well-ventilated area; keep container upright and tightly closed.
Specific end use(s)	No information identified.

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Control Parameters/Occupational Exposure Limit Values

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Bovine serum albumin	--	--	--

Exposure/Engineering controls None required for normal handling of packaged product. 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. Use engineered local exhaust ventilation (LEV) and/or enclosure for procedures where aerosolization may occur such as opened transfers, pumping, and spraying. Solutions can be handled outside a containment system or without LEV during procedures with no potential for aerosolization. All containers for solutions and slurries must be covered while being transferred.

Respiratory protection None required for normal handling of packaged product. If vials are crushed or broken: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with HEPA filters is required when performing aerosol generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.

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.

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

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquids (supplied as individually packaged reagents)
Color	No information identified.
Odor	No information identified.
Odor threshold	No information identified.
pH	No information identified.
Melting point/freezing point	No information identified.

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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	No information identified.
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)

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	No information identified.
Chemical stability	Stable when stored as recommended.
Possibility of hazardous reactions	No information identified.
Conditions to avoid	No information identified.
Incompatible materials	No information identified.
Hazardous decomposition products	No information identified.

SECTION 11 - TOXICOLOGICAL INFORMATION

Note No data were identified for the product/mixture. The following information is for the individual hazardous ingredients contained in some parts of the kit.

Information on toxicological effects

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

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Bovine serum albumin	--	--	--	--

Irritation/Corrosion

No information available

Sensitization

As bovine serum albumin (BSA) is derived from animal (foreign) protein, there is potential for the material to cause an allergic response in humans. Occupational exposure to BSA has caused some cases of allergic sensitization in workers handling this material.

STOT-single exposure

No studies identified.

STOT-repeated exposure/Repeat-dose toxicity

No studies identified.

Reproductive toxicity

No information available

Developmental toxicity

No information available

Genotoxicity

No information available

Carcinogenicity

No information available

Aspiration hazard

No data available.

Human health data

See Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Bovine serum albumin	--	--	--

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 ingredient(s) where applicable. Releases to the environment should be avoided.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste treatment methods Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., 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, e.g., appropriately permitted municipal or on- site wastewater treatment facility.

SECTION 14 - TRANSPORT INFORMATION

Transport Based on the available data, this product/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.

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Transport hazard classes and packing group	None assigned
Environmental hazards	Based on the available data, this product/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 MARPOL73/78 and the IBC Code	Not applicable.

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
Chemical safety assessment	Not conducted.
TSCA status	The components of this product/mixture are not listed.
SARA section 313	Not listed.
California proposition 65	The components of this product/mixture are not listed.
Component Analysis – State	The components of this product/mixture are not listed.
Component Analysis – Chemical Inventory	Bovine serum albumin is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, New Zealand, and the Philippines.
Additional information	No other information identified.

SECTION 16 - OTHER INFORMATION

NFPA Ratings	Bovine serum albumin	Health: 1	Fire: 0	Reactivity: 0
Full text of H phrases and GHS classifications	SS1 - Skin sensitizer Category 1. H317 – May cause an allergic skin sensitization. RS1 - Respiratory Sensitizer Category 1. H334 - May cause allergic or asthmatic symptoms or breathing difficulty if inhaled.			
Sources of data	Information from published literature and internal company data.			

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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; CA - California; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; 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 Labeling of Chemicals; HI - Hawaii; IARC - International Agency for Research on Cancer; 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; MN - Minnesota; NJ - New Jersey; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PA - Pennsylvania; PNEC - Predicted No Effect Concentration; RI - Rhode Island; SARA - Superfund Amendments and Reauthorization Act; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; VT - Vermont; WA - Washington; WHMIS - Workplace Hazardous Materials Information System

Revisions

Revision A: (SSF) ECN-2943; Refer to PDM for date released; Initial version of SDS.

Disclaimer

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