

SAFETY DATA SHEET

Product Identifier: Cell-ID™ 20 Plex Pd Barcoding Set

Catalog ID number: item is a subcomponent in 201060 (Cell-ID™ 20 Plex Pd Barcoding Kit)

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: Support. techsupport@Fluidigm.com
Emergency telephone number	+1 (650) 266-6100 (outside US) +1 (866) 358-4354 (toll free)

Product identifier	Cell-ID™ 20 Plex Pd Barcoding Set
Synonyms	None identified
Trade names	None identified
Chemical family	Mixture is a solution of palladium in DMSO
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	24 June 2015

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture

Regulation (EC) 1272/2008 [GHS]	Flammable liquid - Category 4. Irritant (skin) - Category 2.
AU Hazard Classification (NOHSC)	NON-DANGEROUS GOODS.

Label elements

CLP/GHS hazard pictogram



CLP/GHS signal word

Warning

CLP/GHS hazard statements

H227 - Combustible liquid. H315 - Causes skin irritation.

CLP/GHS precautionary statements

P201 - Obtain special instructions before use. P210 - Keep away from heat/sparks/ open flames/hot surfaces. - No smoking. P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves/eye protection/face protection. P302 + P352 - If on skin: Wash with plenty of soap and water. P321 - Specific treatment (see First Aid information on product label and/or Section 4 of the SDS). P308 + P313 - If exposed or concerned: get medical advice/attention. P332 + P313 - If skin irritation occurs: Get medical advice/attention. P362 - Take off contaminated clothing and wash before reuse. P370 +P378 - In case of fire: Use water spray (fog), foam, dry powder or carbon dioxide for extinction. P403 + P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up. P501 - Dispose of contents/container to location in accordance with local/regional/national/ international regulations.

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SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Palladium(II)			≤ 0.0005%	
Dimethyl sulfoxide	67-68-5	200-664-3	~99.9995%	SI2: H315

Note The ingredients listed above 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.

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, sulfur and platinum-containing compounds.
Flammability/ Explosivity	Combustible liquid and vapor. Keep away from heat and flame. Vapors are heavier than air and may flow along surfaces to remote ignition sources and flashback.
Advice for firefighters	In case of a fire, keep containers cool with water and remove from fire area. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Wash all equipment thoroughly after use. Dike area if possible to contain water for later disposal.

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

Methods and material for containment and cleaning up Remove sources of ignition. Dike area to contain spill. Maintain ventilation until all vapors have been eliminated. Take precautions as necessary to prevent contamination of ground and surface waters. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite or other appropriate material), then place in appropriate container. For large spills, use water spray to disperse vapors; flush spill area. Do not flush to sewer. Prevent run-off from entering drains, sewers, or waterways.

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

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling Minimize generation and accumulation of airborne material. Wash thoroughly after 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 -20°C away from strong oxidizing agents. Keep away from heat and sources of ignition. Store locked up. Store in sealed containers that are appropriately labeled.

Specific end use(s) 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>
Dimethyl sulfoxide	AIHA	WEEL-TWA	250 ppm
	Austria,	MAK	50 ppm, 160 mg/m ³
	Germany,		
	Switzerland		
	Estonia,	STEL	150 ppm, 500 mg/m ³
	Lithuania,		
	Sweden		
	Estonia,	TWA	50 ppm, 150 mg/m ³
	Lithuania		
	Sweden	TLV	50 ppm, 150 mg/m ³
Finland	TWA	50 ppm	
Switzerland	STEL	100 ppm, 320 mg/m ³	
Germany	Ceiling	100 ppm, 320 mg/m ³	
Denmark	TWA	50 ppm, 160 mg/m ³	
Slovenia	TWA	160 mg/m ³	
Denmark	TWA	50 ppm, 160 mg/m ³	

Exposure/Engineering controls If handling bulk product or vials are opened/crushed/broken: Control exposures to below the OEL (if available). Otherwise, selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Open handling should not be performed when handling potent substances, or substances of unknown toxicity. Material should be handled inside a closed process, ventilated enclosure, isolator or device of equivalent or better control that is suitable for dusts and/or aerosols.

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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 handling tasks, an approved and properly worn powered air- purifying respirator equipped with appropriate HEPA filters or combination filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.
Hand protection	Wear nitrile or other impervious gloves if skin contact is possible. Double gloves should be considered. 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	Clear liquid
Color	Colorless
Odor	No information identified.
Odor threshold	No information identified.
pH	No information identified.
Melting point/freezing point	16.1-18.9°C (61-66°F)
Initial boiling point and boiling range	189°C (372°F)
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	0.41 mmHg @ 20°C (68°F)
Vapor density	1.1 g/cm ³
Relative density	No information identified.
Water solubility	Miscible in water.

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Solvent solubility	No information identified.
Partition coefficient (<i>n</i>-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.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	No information identified.
Chemical stability	Stable under normal temperatures and pressures.
Possibility of hazardous reactions	No information identified.
Conditions to avoid	Avoid direct sunlight and conditions that might generate heat. Avoid flames, sparks, and other sources of ignition such as shock or friction. Avoid dispersion as a dust cloud.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No information identified.

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>
Dimethyl sulfoxide	LD50	Oral	Rat	14.5 g/kg
	LD50	Oral	Rat	28.3 g/kg
	LD50	Oral	Mouse	7.9 g/kg
	LD50	Oral	Mouse	21.4 g/kg

Irritation/Corrosion Dimethyl sulfoxide is a skin irritant in humans and animals.

Sensitization No information identified.

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STOT-single exposure

Three groups of male rats were exposed to an aerosol of 1600 mg/m³ DMSO for four hours. Groups were sacrificed immediately after exposure, 24 hours after exposure, or two weeks after exposure. There was no mortality and none of the animals displayed outward signs of toxicity during and after exposure to DMSO. Organs appeared normal at necropsy. Single IV injections of undiluted DMSO were administered to groups of male and female rats. Dose levels were 2.5, 5.0, and 10 g/kg. Each dose was administered over a 1-minute interval. Animals were observed for 14 days following DMSO administration. With one exception, deaths occurred within the first 24 hours. Non-lethal doses of DMSO produced decreased motor activity and myasthenia.

STOT-repeated exposure/Repeat-dose toxicity

Male rats were exposed to 200 mg/m³ DMSO for seven hours/day, five days a week, over six weeks for 30 exposures. There were no outward toxic signs noted in any of the exposed animals throughout the experimental period of six weeks and no effects on blood parameters were reported. DMSO was administered dermally to normal and abraded rabbit skin for 26 weeks at a dose of 1 or 5 g/kg/day. At 23 weeks, treatment was withheld from some animals due to ocular changes; the remaining animals continued to receive DMSO applications for the scheduled 26 weeks. Mortality was high in all groups, however there was no significant differences in mortality between groups. There were no clinical signs to suggest systemic toxicity. DMSO was administered as a 90% solution to rhesus monkeys by gastric intubation, seven days a week for up to 87 weeks. Doses administered were equivalent to 990, 2970, and 8910 mg/kg/day. The principal physical signs seen in the animals given DMSO orally included excess salivation and emesis. These signs occurred sporadically and did not appear to be related to the dose except in the group receiving higher volume of compound. Anorexia occurred at high oral doses but was not evident at the two lower dose levels. No DMSO-related changes were found in the treated monkeys during physical examinations.

Reproductive toxicity

DMSO has been extensively used as a cryoprotectant in the freezing of early experimental animal and human embryos. The viability and apparent normalcy of frozen embryos after thawing suggests that DMSO exposure is not toxic to the early embryo.

Developmental toxicity

DMSO has been associated with teratogenic and/or embryotoxic effects in the hamster, rat, mouse, and chick at high doses. In the hamster, the injection of 500 to 800 mg/kg on the 8th day of gestation was associated with a wide variety of congenital defects, including exencephaly, microphthalmia, bone and limb abnormalities, and as cleft lip. Increased frequencies of fetal death were observed when pregnant rats or rabbits were treated with doses of 5-10 or 1-3 g/kg/day, respectively. However, fetal death was not increased in another study after intraperitoneal treatment of pregnant rats with 6.9 g/kg/day of dimethyl sulfoxide. No malformations were observed in the offspring of rats treated with dimethyl sulfoxide at doses of 0.2-5 g/kg/day during pregnancy.

Genotoxicity

DMSO was negative for genotoxicity in an Ames bacterial cell mutagenicity assay and a sister chromatid exchange assay in Chinese hamster ovary cells. Dimethyl sulfoxide was negative for genotoxicity in an Ames bacterial cell mutagenicity assay and a sister chromatid exchange assay in Chinese hamster ovary cells.

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>
Dimethyl sulfoxide	EC ₅₀ /96h	Skeletonema costatum (Diatom)	12.35 - 25.5 g/L
	LC ₅₀ /96h	Pimephales promelas	34 g/L
	LC ₅₀ /96h	Oncorhynchus mykiss	33-37 g/L (static)
	LC ₅₀ /96h	Lepomis macrochirus	>40 g/L (static)

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LC50/96h	Cyprinus carpio	41.7 g/L
EC50/24h	Daphnia magna	7 g/L

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 the formulated product have not been fully investigated. 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.
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SECTION 14 - TRANSPORT INFORMATION

Transport	Not dangerous goods.
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	Avoid release to the environment.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Hazardchem Code/HIN	None assigned.

SECTION 15 - REGULATORY INFORMATION

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.
OSHA Hazardous	Combustible liquid and vapor. Harmful if swallowed. Causes skin irritation. Can cause damage to immune, hematological, gastrointestinal, and central nervous systems. Potential mutagenicity hazard - contains material which may be mutagenic. Reproductive hazard - can cause adverse reproductive effects in males. Possible developmental hazard - may cause adverse developmental effects and birth defects (based on animal data).
WHMIS classification	B/3 – Combustible Liquid. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

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TSCA status Listed - inventory.

SARA section 313 Fire Hazard.

California proposition 65 Not listed.

Component Analysis - State Not listed.

Component Analysis - Chemical Inventory DMSO is listed in the chemical inventory of the following countries: Australia, China, Canada, and EU.

SECTION 16 - OTHER INFORMATION

NFPA Ratings

DMSO Health: 0 Fire: 2 Reactivity: 0

Full text of H phrases, P phrases and GHS classification

FL4 - Flammable Liquid Category 4. ATO2 - SC1 - Skin corrosion Category 1. EC1 - Eye corrosion Category 1. H227 - Combustible liquid. H300 - Fatal if swallowed. H314 - Causes severe skin burns and eye damage. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. H360FD - May damage fertility. May damage the unborn child. H370 - Causes damage to immune, hematological, gastrointestinal, and central nervous systems. H372 - Causes damage to immune, hematological, gastrointestinal, and central nervous systems through prolonged or repeated exposure.

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; 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; 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; ME - Maine; 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; NOHSC - National Occupational Health and Safety Commission; 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; WHMIS - Workplace Hazardous Materials Information System

Revisions

This is the first version of this SDS.

Disclaimer

The statements contained herein are offered for informational purposes only and are based upon technical data. Fluidigm Corporation believes them to be accurate at the date of publication, but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Fluidigm Corporation) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should perform their own investigations to determine suitability of information and product for their particular purposes.

SAFETY DATA SHEET

Product Identifier: Maxpar® Fix I Buffer (5X)

Catalog ID number: 201065 (stand-alone)

(includes Barcoding kit Catalog ID 201060, and 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 (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	Maxpar® Fix I Buffer
Synonyms	None identified
Trade names	None identified
Chemical family	Mixture contains formaldehyde.
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	24 June 2015

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System [GHS]	Acute toxicity - oral - Category 4. Acute toxicity - inhalation - Category 3. Corrosive (skin) - Category 1. Skin Sensitizer - Category 1. Corrosive (eye) - Category 1. Germ Cell Mutagenicity - Category 2. Carcinogenic - Category 2 Specific Target Organ Toxicity (single exposure) - Category 3.
AU Hazard Classification (NOHSC)	Hazardous substance. Dangerous goods.

Label elements

CLP/GHS hazard pictogram	
CLP/GHS signal word	Danger
CLP/GHS hazard statements	H302 - Harmful if swallowed. H314: Causes severe skin burns and eye damage. H317 - May cause allergic skin reaction. H318 - Causes serious eye damage. H331 - Toxic if inhaled. H335 - May cause respiratory irritation. H341 - Suspected of causing genetic defects. H350 - May cause cancer.
CLP/GHS precautionary statements	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe mist/vapors/ spray. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/eye protection/face protection. P301+P310: IF SWALLOWED: Immediately call a Poison Center or doctor/physician. P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES:

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Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 - If exposed or concerned: get medical Rinse skin with water/shower. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 - If exposed or concerned: get medical advice/ attention. P321 - Specific treatment (see First Aid information on product label and/ or Section 4 of the SDS). P330 - Rinse mouth. P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention. P361 - Remove/Take off immediately all contaminated clothing. P363 - Wash contaminated clothing before reuse. P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards

Mixture contains formaldehyde.

The major toxic effects caused by acute formaldehyde exposure via inhalation are eye, nose and throat irritation, effects on the nasal cavity, and asthma-like respiratory problems. Other effects include coughing, wheezing, chest pains, and bronchitis. Ingestion has resulted in corrosion of the gastrointestinal tract and inflammation and ulceration of the mouth, esophagus, and stomach. Skin exposure can cause irritation such as dermatitis and itching. Limited data suggests an association between formaldehyde exposure and an increased incidence of lung and nasopharyngeal cancer.

Note

This product is classified as hazardous according to Regulation EC No 1272/2008 (EU CLP) and Hazard Communication Standard No. 1910.1200 (US OSHA).

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ELINCS #</u>	<u>Amount</u>	<u>GHS Classification</u>
Formaldehyde	50-00-0	200-001-8	10%	ATO3: H301; ATD3: H311; ATI1: H330; GCM2: H341; Carc1B: H350; SC1: H314; SS1: H317; EC1: H318; STOT-S3: H335

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.

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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 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 or carbon dioxide.

Flammability/Explosivity Combustible liquid and vapor. Keep away from heat and flame. Vapors are heavier than air and may flow along surfaces to remote ignition sources and flashback.

Advice for firefighters In case of a fire, keep containers cool with water and remove from fire area. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Wash all equipment thoroughly after use. Dike area if possible to contain water for later disposal.

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 the mist/vapors/spray.

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

Methods and material for containment and cleaning up 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 with an appropriate solvent (see Section 9).

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

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling If vials are crushed or broken, drug substance may be released into the air. Minimize generation and accumulation of airborne material. Follow recommendations for handling bulk formulated/package cytotoxic pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed). Wash thoroughly after 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 2-8 °C in a well-ventilated area; keep container upright and tightly closed.

Specific end use(s) No information identified.

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Product Identifier: Maxpar® Fix I Buffer (5X)

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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>
Formaldehyde	ACGIH, Portugal, Spain	Ceiling	0.3 ppm (sensitizer)
	Australia	STEL	2 ppm
	Australia	TWA-8 HR	1 ppm (sensitizer)
	Austria	TWA-8 HR/Ceiling/STEL	0.5 ppm (skin, sensitizer)
	Brazil	Ceiling	1.6 ppm
	Bulgaria	TWA-8 HR/STEL	1/2 mg/m ³
	Czech Republic	TWA-8 HR/Ceiling	0.5/1 mg/m ³ (skin, sensitizer)
	Denmark	Ceiling	0.3 ppm
	Estonia, Sweden	TWA-8 HR/Ceiling	0.5/1 ppm (sensitizer)
	Finland	TWA-8 HR/Ceiling	0.3/1 ppm
	France	TWA-8 HR/STEL	0.5/1 ppm
	Germany, Slovak Republic	TWA-8 HR/Ceiling	0.3/0.6 ppm (sensitizer)
	Greece, Ireland, United Kingdom	TWA-8 HR/STEL	2 ppm
	Hungary	TWA-8 HR/STEL	0.6 mg/m ³ (sensitizer, skin)
	Latvia	TWA-8 HR	0.5 mg/m ³
	Lithuania	TWA-8 HR/Ceiling	0.5/1.2 ppm (sensitizer)
	Mexico	Ceiling	2 ppm
	Netherlands	TWA-8 HR/STEL	0.15/0.5 mg/m ³
	New Zealand, Sweden	Ceiling	1 ppm (sensitizer)
	NIOSH	Ceiling (15 min)	0.1 ppm
	NIOSH	IDLH	20 ppm
	NIOSH	TWA-8 HR	0.016 ppm
	Poland	TWA-8 HR/STEL	0.5/1 mg/m ³ (sensitizer, skin)
	Romania	TWA-8 HR/STEL	1/2 ppm
	Singapore	STEL	0.3 ppm
	Slovenia	TWA-8 HR/STEL	0.5 ppm (skin)
	OSHA	TWA-8 HR/STEL	0.75/2 ppm

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. Open handling should not be performed when handling potent substances, or substances of unknown toxicity. Material should be handled inside a closed process, ventilated enclosure, isolator or device of equivalent or better control that is suitable for dusts and/or aerosols.

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 worn powered air-purifying respirator equipped with HEPA filters or combination filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Hand protection

Wear nitrile or other impervious gloves if skin contact is possible. Double gloves should be considered.

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.

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- 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	Clear liquid
Color	Colorless
Odor	No information identified.
Odor threshold	No information identified.
pH	No information identified.
Melting point/freezing point	5°F
Initial boiling point and boiling range	>200°F
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	1.3 mmHg @ 20°C
Vapor density	1.04 g/cm ³
Relative density	No information identified.
Water solubility	Very 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.

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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 Avoid contact with heat, sparks, flames or other ignition sources.

Incompatible materials No information identified.

Hazardous decomposition products No information identified.

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>
Formaldehyde	LD50	Oral	Rat	100 mg/kg
	LD50	Oral	Mouse	42 mg/kg
	LD50	Dermal	Rabbit	270 mg/kg
	LC50 (4 hour)	Inhalation	Rat	0.48 mg/L
	LC50 (4 hour)	Inhalation	Mouse	0.414 mg/L

Irritation/Corrosion Inhaled formaldehyde was irritating to rat eyes and the respiratory system and caused airway resistance at 1-50 ppm. It was irritating to rabbit skin at 5% and a 0.5% formaldehyde solution produced a slight and short-lasting inflammatory reaction.

Sensitization Sensitization was observed in guinea pigs at ≥ 0.5 mg/m².

STOT-single exposure Acute formaldehyde exposure in rats at inhaled levels of 1-50 ppm caused respiratory and hypothalamic changes. High doses (>100 ppm) caused gastrointestinal (GI) effects.

STOT-repeated exposure/Repeat-dose toxicity Inhalation data from several animal studies indicate that formaldehyde exposure results in neurotoxicity, liver toxicity and adverse effects on the respiratory system at occupationally relevant levels. In guinea pigs, skin exposed to 0.4-4% formaldehyde solution had an increased incidence of erythema and thicker skin. Oral administration of formaldehyde at ≥ 82 mg/kg/day for 18 months resulted in severe damage to the gastric mucosa of rats. The oral NOAEL was 15 mg/kg/day.

Reproductive toxicity No data available.

Developmental toxicity Formaldehyde was not a developmental toxicant in rodents at oral doses up to 185 mg/kg or inhaled doses up to 40 ppm. Reduced fetal body weight was observed at ≥ 20 ppm.

Genotoxicity Formaldehyde was positive for genotoxicity in a battery of in vitro and in vivo tests, including an Ames assay, chromosomal aberration assays, and sister chromatid assays.

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Carcinogenicity	Inhalation of 14.3 ppm formaldehyde for up to 2 years caused an increase in nasal squamous cell carcinomas in rats. Oral doses at ≥ 50 ppm increased the incidence of GI tumors. Formaldehyde is classified as an IARC 2B compound. Formaldehyde is listed as a known human carcinogen by OSHA. Formaldehyde is classified by ACGIH as a suspected human carcinogen. According to NTP, formaldehyde is a known carcinogen.
Aspiration hazard	No data available.
Human health data	See Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

Compound	Type	Species	Concentration
Formaldehyde	LC ₅₀ /96h	Fathead minnow	24.1 mg/L (flow-through)
	LC ₅₀ /96h	Brachydanio rerio (zebrafish)	41 mg/L
	EC ₅₀ /48h	Daphnia magna	2 mg/L
	EC ₅₀ /24h	Daphnia magna	42 mg/L

Persistence and Degradability	Formaldehyde is readily biodegradable.
Bioaccumulative potential	The risk for bioaccumulation is low (BCF = 3).
Mobility in soil	Formaldehyde is expected to have a very high mobility in soil.
Results of PBT and vPvB assessment	Not performed.
Other adverse effects	No data identified.
Note	The environmental characteristics of this 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.
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SECTION 14 - TRANSPORT INFORMATION

Transport	This product is regulated for transportation as a hazardous material.
UN number	3334
UN proper shipping name	Aviation regulated liquid n.o.s. (contains 10% formaldehyde)
Transport hazard classes and packing group	Hazard Class - 9; Packing Group III.
Environmental hazards	Based on the available data, this mixture is not regulated as an environmental hazard or a marine pollutant.
Special precautions for users	Mixture not fully tested - avoid exposure.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Hazardchem Code/HIN	2Z

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SECTION 15 - REGULATORY INFORMATION

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	ATO3: H301; ATD3: H311; ATI3: H331; GCM2: H341; Carc1B: H350; SC1: H314; SS1: H317; EC1: H318; STOT-S3: H335
TSCA status	Formaldehyde is listed.
SARA section 313	Formaldehyde is listed.
California proposition 65	Formaldehyde is listed as carcinogenic.
Component Analysis - State	Formaldehyde is listed as hazardous in AZ, CA, CT, FL, HI, IL, IN, IO, MA, ME, MD, MN, NJ, NM, NV, PA, RI, TN, UT, VT, VA, WA, and WY.
Component Analysis - Chemical Inventory	Formaldehyde is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, Japan, Korea, and New Zealand.

SECTION 16 - OTHER INFORMATION

NFPA Ratings	Formaldehyde	Health: 2	Fire: 0	Reactivity: 2
Full text of H phrases and GHS classifications	ATO3 - Acute Toxicity (Oral) Category 3. H301 - Toxic if swallowed. ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. ATD3 - Acute Toxicity (Dermal) Category 3. H311 - Toxic in contact with skin. ATI1 - Acute Toxicity (Inhalation) Category 1. ATI2 - Acute Toxicity (Inhalation) Category 2. H330 - Fatal if inhaled. SS1 - Skin sensitizer Category 1. H317 - May cause an allergic skin reaction. SC1 - Skin corrosion Category 1. H314 - Causes severe skin burns and eye damage. EC1 - Eye corrosion Category 1. H318 - Causes serious eye damage. STOT-S3 - Specific Target Organ Toxicity Following Single Exposure Category 3. H335 - May cause respiratory irritation. GCM2 - Germ Cell Mutagenicity Category 2. H341 - Suspected of causing genetic defects. Carc1B - Carcinogenic Category 1B. H350 - May cause cancer.			
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; AZ - Arizona; CA - California; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; CT - Connecticut; 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; FL - Florida; 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; IO - Iowa; IMDG - International Maritime Dangerous Goods; IN - Indiana; MA - Massachusetts; ME - Maine; MD - Maryland; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NJ - New Jersey; NM - New Mexico; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; NV - Nevada; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PA - Pennsylvania; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STEL - Short Term Exposure Limit; RI - Rhode Island; TDG - Transportation of Dangerous Goods; TN - Tennessee; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UT - Utah; VA - Virginia; VT - Vermont; WA - Washington State; WHMIS - Workplace Hazardous Materials Information System; WY - Wyoming			



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Revisions

This is the first version of this SDS.

Disclaimer

The statements contained herein are offered for informational purposes only and are based upon technical data. Fluidigm Corporation believes them to be accurate at the date of publication, but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Fluidigm Corporation) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should perform their own investigations to determine suitability of information and product for their particular purposes.

SAFETY DATA SHEET

Product Identifier: Maxpar[®] Cell Staining Buffer
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 (includes Barcoding kit Catalog ID 201060, and 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 (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	Maxpar [®] Cell Staining Buffer
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 #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Sodium azide	26628-22-8	247-852-1	0.02%	ATO2: H300; AA1: H400; CA1: H410; EUH032

Note The ingredient(s) 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, 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 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 2-8°C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled.

Specific end use(s) 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, U.S.- 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, U.S.- California OSHA, United Kingdom	OEL-TWA	0.1 mg/m ³
NIOSH, U.S.- California OSHA	Ceiling	0.3 mg/m ³
Germany	OEL-STEL	0.4 mg/m ³
Germany	OEL-TWA	0.2 mg/m ³

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.

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 (e.g., in common areas or out-of-doors).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Clear liquid

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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 (<i>n</i>-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	Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.
Chemical stability	Stable under normal temperatures and pressures.
Possibility of hazardous reactions	No information identified.
Conditions to avoid	Keep away from strong oxidizing agents.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No information identified.

SAFETY DATA SHEET

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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	LD ₅₀	Oral	Rat	27 mg/kg
	LD ₅₀	Oral	Mouse	27 mg/kg
	LD ₅₀	Dermal	Rabbit	20 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 Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Sodium azide	LC ₅₀ /96h	Oncorhynchus mykiss	0.8 mg/L
	LC ₅₀ /96h	Lepomis macrochirus	0.7 mg/L
	LC ₅₀ /96h	Pimephales promelas	5.46 mg/L

Additional toxicity information Sodium azide is toxic to aquatic organisms and should not be allowed to accumulate in metal piping as 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 ingredient(s) where applicable. Although present at low concentrations, disposal should consider that sodium azide is present. Releases to the environment should be avoided.

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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 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 MARPOL73/78 and the IBC Code Not applicable.

Hazardchem Code/HIN None assigned.

SECTION 15 - REGULATORY INFORMATION

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**

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.



SAFETY DATA SHEET

Product Identifier: Maxpar® Cell Staining Buffer

Catalog ID number: Cat# 201068 (stand-alone)

(includes Barcoding kit Catalog ID 201060, and Panel Kits within the following range of Catalog numbers: 201302-2013XX)

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; 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

This is the first version of this SDS.

Disclaimer

The statements contained herein are offered for informational purposes only and are based upon technical data. Fluidigm Corporation believes them to be accurate at the date of publication, but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Fluidigm Corporation) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should perform their own investigations to determine suitability of information and product for their particular purposes.

SAFETY DATA SHEET

Product Identifier: Maxpar[®] 10X Barcode Perm Buffer
Part ID number: S00116

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	Maxpar [®] 10X Barcode Perm Buffer
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.

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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 #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Sodium azide	26628-22-8	247-852-1	0.02%	ATO2: H300; AA1: H400; CA1: H410; EUH032

Note The ingredient(s) 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.

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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 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 2-8°C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled.

Specific end use(s) 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, U.S.- California OSHA, United Kingdom	OEL-STEL	0.3 mg/m ³
	New Zealand, Portugal	Ceiling	0.29 mg/m ³

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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, U.S.- California OSHA, United Kingdom	OEL-TWA	0.1 mg/m ³
NIOSH, U.S.- California OSHA	Ceiling	0.3 mg/m ³
Germany	OEL-STEL	0.4 mg/m ³
Germany	OEL-TWA	0.2 mg/m ³

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.

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 (e.g., in common areas or out-of-doors).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Clear liquid

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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)

SECTION 10 - STABILITY AND REACTIVITY

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

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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

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 Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

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

Additional toxicity information Sodium azide is toxic to aquatic organisms and should not be allowed to accumulate in metal piping as 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 ingredient(s) where applicable. Although present at low concentrations, disposal should consider that sodium azide is present. Releases to the environment should be avoided.

SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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 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 MARPOL73/78 and the IBC Code Not applicable.

Hazardchem Code/HIN None assigned.

SECTION 15 - REGULATORY INFORMATION

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**

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.



SAFETY DATA SHEET

Product Identifier: Maxpar® 10X Barcode Perm Buffer
Part ID number: S00116

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; 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

This is the first version of this SDS.

Disclaimer

The statements contained herein are offered for informational purposes only and are based upon technical data. Fluidigm Corporation believes them to be accurate at the date of publication, but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Fluidigm Corporation) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should perform their own investigations to determine suitability of information and product for their particular purposes.

SAFETY DATA SHEET

Product Identifier: Maxpar[®] PBS
Part ID number: S00117

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	Maxpar [®] PBS
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.

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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 #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Sodium azide	26628-22-8	247-852-1	0.02%	ATO2: H300; AA1: H400; CA1: H410; EUH032

Note The ingredient(s) 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.

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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 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 2-8°C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled.

Specific end use(s)

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, U.S.- California OSHA, United Kingdom	OEL-STEL	0.3 mg/m ³
	New Zealand, Portugal	Ceiling	0.29 mg/m ³

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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, U.S.- California OSHA, United Kingdom	OEL-TWA	0.1 mg/m ³
NIOSH, U.S.- California OSHA	Ceiling	0.3 mg/m ³
Germany	OEL-STEL	0.4 mg/m ³
Germany	OEL-TWA	0.2 mg/m ³

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.
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 (e.g., in common areas or out-of-doors).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Clear liquid

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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 (<i>n</i>-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	Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.
Chemical stability	Stable under normal temperatures and pressures.
Possibility of hazardous reactions	No information identified.
Conditions to avoid	Keep away from strong oxidizing agents.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No information identified.

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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

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 Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

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

Additional toxicity information Sodium azide is toxic to aquatic organisms and should not be allowed to accumulate in metal piping as 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 ingredient(s) where applicable. Although present at low concentrations, disposal should consider that sodium azide is present. Releases to the environment should be avoided.

SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
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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 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 MARPOL73/78 and the IBC Code Not applicable.

Hazardchem Code/HIN None assigned.

SECTION 15 - REGULATORY INFORMATION

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
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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.



SAFETY DATA SHEET

Product Identifier: Maxpar® PBS
Part ID number: S00117

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; 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

This is the first version of this SDS.

Disclaimer

The statements contained herein are offered for informational purposes only and are based upon technical data. Fluidigm Corporation believes them to be accurate at the date of publication, but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Fluidigm Corporation) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should perform their own investigations to determine suitability of information and product for their particular purposes.