

SAFETY DATA SHEET

Product Identifier: Maxpar® Direct™ Immune Profiling Assay
Catalog ID numbers: Cat# S00124 (subcomponent of Cat# 201325)

SDS ID: MSDS-S00124 Rev 1

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® Direct™ Immune Profiling Assay
Synonyms	None identified
Trade names	Maxpar® Direct™ Immune Profiling Assay
Chemical family	Mixture - contains polypeptides.
Relevant identified uses of the substance or mixture and uses advised against	<i>For Research Use Only. Not for use of diagnostic procedures</i>
Note	This SDS is written to address potential worker health and safety issues associated with the handling of the formulated product/mixture.

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System [GHS]	Not classified
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Label elements

GHS hazard pictogram	None required
GHS signal word	None required
GHS hazard statements	None required

GHS precautionary statements	None required
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Other hazards	Maxpar® Direct™ Immune Profiling Assay is an antibody-based immune profiling mixture. In a workplace setting, the likelihood of systemic effects following accidental ingestion is low, due to the rapid breakdown of proteins in the digestive tract. Based on the large molecular weight of proteins, systemic absorption following inhalation is anticipated to be low.
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Note	This mixture does not meet criteria for classification under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA).
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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>
Maxpar® Antibodies	N/A	N/A	0.1-0.5%	Not classified
Ethylene glycol	107-21-1	203-473-3	5-15%	ATO4: H302
Sodium azide	26628-22-8	247-852-1	0.05-0.15%	ATO2: H300; A1: H400; CA1: H410; EUH032
Sodium Phosphate dibasic	7558-79-4	231-448-7	1-5%	SI2: H315; EI2: H319
Sodium chloride	7647-14-5	231-598-3	1-5%	Not classified

Note The substances listed above are considered hazardous and/or main active ingredients. The remaining components are not hazardous and/or present at amounts below reportable limits. Sodium chloride is included because it has OELs and is present at or above 1%.

Amounts are listed as ranges; the exact percentage of composition is withheld as a trade secret. See Section 16 for full text of GHS classifications.

SECTION 4 - FIRST AID MEASURES

Description of first aid measures

Immediate Medical Attention Needed

No. If exposed or concerned: Get medical advice/attention.

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

Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively. If accidental exposure occurs to an individual who is also taking one or more concomitant medications, consult the respective package or prescribing information for potential drug interactions.

SECTION 5 - FIREFIGHTING MEASURES

Extinguishing media

Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

Specific hazards arising from the substance or mixture

No information identified. May emit carbon monoxide, carbon dioxide, oxides of nitrogen and sulfur, and other chlorine-, phosphorus-, and sodium-containing compounds.

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SECTION 5 - FIREFIGHTING MEASURES...continued

Flammability/ Explosivity	No explosivity or flammability data identified. High concentrations of finely divided airborne organic particles can potentially explode if ignited.
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 dust.
Environmental precautions	Do not empty into drains. Avoid release to the environment.
Methods and material for containment and cleaning up	DO NOT RAISE DUST. 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	Follow recommendations for handling pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed). Avoid contact with eyes, skin and other mucous membranes. Wash thoroughly after handling. Avoid breathing vapor/mist/spray.
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 Wash hands, face and other potentially exposed areas immediately in the event of physical contact.

Control Parameters/Occupational Exposure Limit Values

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Maxpar® Antibodies	--	--	--
Ethylene glycol	ACGIH	TLV/Ceiling	100 mg/m ³
	Austria, Germany	TWA 8-HR	10 ppm; 26 mg/m ³
	Austria, Germany	STEL (8 x 5 min)	20 ppm; 52 mg/m ³



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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION...continued

**Control
 Parameters/Occupational
 Exposure Limit
 Values...continued**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
	Bulgaria, Croatia, Cyprus, Estonia, France, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Romania, Slovak Republic, Slovenia, Spain, United Kingdom	TWA 8-HR	20 ppm; 52 mg/m ³
	Bulgaria, Croatia, Cyprus, Estonia, France, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Romania, Slovak Republic, Slovenia, Spain, United Kingdom	STEL	40 ppm; 104 mg/m ³
	Czech Republic	TWA 8-HR	50 mg/m ³
	Czech Republic, Italy, Portugal	Ceiling	100 mg/m ³
	Denmark	TWA 8-HR	10 ppm; 26 mg/m ³ ; 10 mg/m ³ (vapor)
	Finland	TWA 8-HR	20 ppm, 50 mg/m ³
	Finland	STEL	40 ppm; 100 mg/m ³
	Greece	TWA 8-HR; STEL	50 ppm (vapor); 125 mg/m ³ (vapor)
	Lithuania, Sweden	TWA 8-HR	10 ppm (aerosol and vapor); 25 mg/m ³ (aerosol and vapor)
	Lithuania, Sweden	STEL	20 ppm (aerosol and vapor); 50 mg/m ³ (aerosol and vapor)
	NIOSH	Ceiling	50 ppm
	Poland	TWA 8-HR	15 mg/m ³
	Poland	STEL	50 mg/m ³
	US-OSHA	Ceiling (vacated)	50 ppm; 125 mg/m ³

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ...continued

**Control
 Parameters/Occupational
 Exposure Limit
 Values ...continued**

<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
	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

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ...continued

Control Parameters/Occupational Exposure Limit Values ...continued

Sodium Phosphate dibasic	--	--	--
Sodium chloride	Latvia, Lithuania, TWA-8 HR		5 mg/m ³
	Russia		

Exposure/Engineering controls

None required for normal handling of packaged product. If handling bulk product and/or packaging is broken: Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use engineered local exhaust ventilation (LEV) and/or enclosure at dust generating points and for high dust generating operations such as weighing, material transfers and where energy is used (e.g., milling).

Respiratory protection

None required for normal handling of packaged product. If handling bulk product and/or packaging is 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. Use a powered air-purifying respirator equipped with HEPA filters or combination filters or 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 a lower level of respiratory protection may not provide adequate protection.

Hand protection

None required for the normal handling of packaged product. Wear nitrile or other impervious gloves if skin contact with product is possible.

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

None required for normal handling of packaged product. Wear safety glasses with side shields if eye contact is likely, e.g., during clean up of large spill. Base the choice of protection on the job activity and potential for contact with eyes and face.

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 product, 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	Fluffy solid packaged for reconstitution.
Color	White
Odor	No information identified.
Odor threshold	No information identified.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ...continued

pH	No information identified.
Melting point/freezing point	No information identified.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	No information identified.
Upper/lower flammability or explosive limits	No information identified.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	No information identified.
Water solubility	Soluble.
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	Not applicable.
Explosive properties	No information identified.
Oxidizing properties	No information identified.
Other information	
Molecular formula	Not applicable (Mixture)
Molecular weight	Not applicable (Mixture)

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	No information identified.
Chemical stability	No information identified.
Possibility of hazardous reactions	No information identified.

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SECTION 10 - STABILITY AND REACTIVITY ...continued

Conditions to avoid No information identified.

Incompatible materials No information identified.

Hazardous decomposition products No information identified.

SECTION 11 - TOXICOLOGICAL INFORMATION

Note No data for this product/mixture were identified. The following data describe the individual ingredients where applicable.

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>
Maxpar® Antibodies	--	--	--	--
Ethylene glycol	LD50	Oral	Rat	4700 mg/kg
	LD50	Oral	Mouse	5500 mg/kg
	LD50	Oral	Guinea Pig	6610 mg/kg
	LD50	Oral	Dog	5500 mg/kg
	LD50	Oral	Cat	1650 mg/kg
Sodium azide	LD50	Oral	Rat	27 mg/kg
	LD50	Oral	Mouse	27 mg/kg
	LD50	Dermal	Rabbit	20 mg/kg
Sodium Phosphate dibasic	LD50	Oral	Rat	17000 mg/kg
Sodium chloride	LD50	Oral	Rat	3000 mg/kg
	LD50	Dermal	Rabbit	>10,000 mg/kg
	LC50	Inhalation	Rat	>42 g/m ³ (1-hr)
	LD50	Oral	Mouse	4000 mg/kg

Irritation/Corrosion Sodium Phosphate was irritating to the rabbit skin and eye.

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. None of the components of this mixture present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

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SECTION 11 - TOXICOLOGICAL INFORMATION ...continued

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>
Maxpar® Antibodies	--	--	--
Ethylene glycol	EC ₅₀ /96h	Pseudokirchneriella subcapitata (green algae)	6500-13000 mg/L
	LC ₅₀ /96h	Oncorhynchus mykiss, rainbow trout	41000 mg/L
	LC ₅₀ /96h	Oncorhynchus mykiss, rainbow trout	40761 mg/L [static]
	LC ₅₀ /96h	Lepomis macrochirus, bluegill sunfish	27540 mg/L [static]
	LC ₅₀ /96h	Pimephales promelus (fathead minnow)	40000-60000 mg/L [static]
	LC ₅₀ /96h	Poecilia reticulata, freshwater fish	16000 mg/L [static]
	EC ₅₀ /48h	Daphnia magna	46300 mg/L
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
Sodium Phosphate dibasic	--	--	--
Sodium chloride	EC ₅₀ /48h	Daphnia magna	340-1000 mg/L
	EC ₅₀ /96h	Fish (various species)	>4,700 mg/L

Persistence and Degradability Polypeptides are expected to degrade rapidly when released into the environment.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Results of PBT and vPvB assessment Not performed.

Other adverse effects No data available.

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.

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	Based on the available data, this product/mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
UN number	None assigned.
UN proper shipping name	None assigned.
Transport hazard classes and packing group	None assigned.
Environmental hazards	This product/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.

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
Chemical safety assessment	Not conducted.
TSCA status	Not listed.
SARA section 313	Not listed.
California proposition 65	Not listed.
Additional information	No other information identified.

SECTION 16 - OTHER INFORMATION

Full text of H phrases and GHS classifications	ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. ATO2 - Acute Toxicity (Oral) Category 2. H300 - Fatal if swallowed. AA1- Acute aquatic toxicity Category 1. H400 - Very toxic to aquatic life. CA1 - Chronic Aquatic Toxicity Category 1. H410 - Very toxic to aquatic life with long lasting effects. EUH032 - Contact with acids liberates very toxic gas. SI2 - Skin irritant Category 2. H315 - Causes skin irritation. E12 - Eye irritant Category 2. H319 - Causes serious eye irritation.
Sources of data	Information from published literature and internal company data.

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SECTION 16 - OTHER INFORMATION...continued

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; 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; 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; PBT - Persistent, Bioaccumulative, and Toxic; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Issue Date

9 November 2018

Revisions

This is the first version of this SDS.

Disclaimer

Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product. For Research Use Only. Not for use in diagnostic procedures.