

SAFETY DATA SHEET

Product Identifier: Maxpar® Cell Acquisition Solution
Catalog ID number: 201237

SDS ID: MSDS-201237

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 Acquisition Solution
Synonyms	Nitram®, ammonia nitrate
Trade names	None identified
Chemical family	Mixture; contains ammonium nitrate
Relevant identified uses of the substance or mixture and uses advised against	<i>For Research Use Only. Not for use in diagnostic procedures.</i>

Note This SDS is written to address potential health and safety issues associated with the handling of the formulated product. The pharmacological, toxicological and ecological properties of this mixture have not been fully characterized. This SDS will be revisited as more data become available.

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System [GHS]	Not classified
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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 No information was identified for the mixture. The mixture contains small amounts of ammonium nitrate. Ammonium nitrate is irritating to the eyes and may be irritating to the respiratory tract. Ingestion of ammonium nitrate may cause methemoglobinemia (a disorder where oxygen is inefficiently transported in the blood).

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). Nevertheless, it should be handled with caution as it has not yet been fully tested.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No.</u>	<u>EINECS/ ELINCS No.</u>	<u>Amount</u>	<u>GHS Classification</u>
Ammonium nitrate	6484-52-2	229-347-8	<0.1%	OS3:H272; EI2:H319

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	No
Eye contact	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 ammonium nitrate. Medical conditions aggravated by exposure: none known or reported. Treat symptomatically and supportively.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media	Use dry powder or dry sand.
Specific hazards arising from the substance or mixture	No information identified. May emit carbon monoxide, carbon dioxide and nitrogen-containing compounds.
Flammability/explosivity	No information identified. As an aqueous solution, it is not expected to be flammable or explosive.
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). Do not breathe dust/mist/vapors/spray.
Environmental precautions	Do not empty into drains. Avoid release to the environment.

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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.

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

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling Wear appropriate protective equipment when handling. Avoid contact with skin and eyes. 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 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>
Ammonium nitrate	--	--	--

Exposure/engineering controls Control exposures to below the OEL (if available). Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at aerosol/mist-generating points. Use engineered local exhaust ventilation (LEV) and/or enclosure for procedures where aerosolization may occur, such as opened transfers, pumping, and spraying. Solutions can be handled outside a containment system or without LEV during procedures with no potential for aerosolization. All containers for solutions and slurries must be covered while being transferred.

Respiratory protection Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with high-efficiency particulate air (HEPA) filters is required when performing aerosol-generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.

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

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

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

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

Other protective measures Wash hands in the event of contact with this 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).

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear liquid
Color	Colorless
Odor	Odorless
Odor threshold	No information identified
pH	5.4 to 6.0
Melting point/freezing point	169 °C
Initial boiling point and boiling range	210 °C
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	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	Ammonium nitrate is an oxidizer.

Other information

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

SECTION 10: STABILITY AND REACTIVITY

Reactivity Ammonium nitrate may react with strong bases.

Chemical stability Stable under normal temperatures and pressures

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Possibility of hazardous reactions	No information identified
Conditions to avoid	No information identified
Incompatible materials	Reducing agents, powdered metals, strong acids
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>
Ammonium nitrate	LD ₅₀	Oral	Rat	2217 mg/kg
	LC ₅₀	Inhalation	Rat	>88.8 mg/L
	LD ₅₀	Dermal	Rat	>5000 mg/kg

Irritation/corrosion Ammonium nitrate is not irritating to rabbit skin, but was irritating to rabbit eyes.

Sensitization Not a skin sensitizer

STOT: single exposure No studies identified

STOT: repeated exposure/repeat-dose toxicity No effects were reported at inhalation doses up to 1 mg/m², 6 hours/day, 5 days/week, for 4 weeks.

Reproductive toxicity No studies identified

Developmental toxicity No studies identified

Genotoxicity Ammonium nitrate was negative for mutagenicity in an Ames assay.

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>
Ammonium nitrate	LC ₅₀ (48 h)	Cyprinus carpio (carp)	447 mg/L

Additional toxicity information No data identified

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

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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 ammonium nitrate 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., an appropriately permitted chemical waste incinerator. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or onsite wastewater treatment facility.

SECTION 14: TRANSPORT INFORMATION

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

UN number None assigned

UN proper shipping name None assigned

Transport hazard classes and packing group None assigned

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

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

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable

Hazchem Code/HIN None assigned

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 Ammonium nitrate is listed.

SARA Section 313 Nitrate compounds are listed.

California Proposition 65 Not listed.

Component analysis: state Ammonium nitrate is listed in MA, NJ, PA and RI.

Component analysis: chemical inventory Ammonium nitrate is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, Mexico, New Zealand, the Philippines and Vietnam.

Additional information No other information identified

SECTION 16: OTHER INFORMATION

NFPA Ratings **Ammonium nitrate** **Health: 0** **Fire: 0** **Reactivity: 3**

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Full text of H phrases and GHS classifications

OS3, Oxidizing solid Category 3; H272, May intensify fire, oxidizer; E12, Eye irritant Category 2; H319, Causes serious eye irritation.

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 No., 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; HIN, hazard identification number; IARC, International Agency for Research on Cancer; IBC, International Building Code; IDLH, Immediately Dangerous to Life or Health; IATA, International Air Transport Association; IMDG, International Maritime Dangerous Goods; LOEL, Lowest Observed Effect Level; LOAEL, Lowest Observed Adverse Effect Level; MA, Massachusetts; MARPOL, International Convention for the Prevention of Pollution from Ships; MN, Minnesota; NFPA, National Fire Protection Association; NJ, New Jersey; NIOSH, The National Institute for Occupational Safety and Health; 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; PBT, persistent, bioaccumulative and toxic; PNEC, Predicted No Effect Concentration; RI, Rhode Island; SARA, Superfund Amendments and Reauthorization Act; STEL, Short Term Exposure Limit; STOT, specific target organ toxicity; TDG, Transportation of Dangerous Goods; TSCA, Toxic Substances Control Act; TWA, Time Weighted Average; vPvB, very persistent and very bioaccumulative; VT, Vermont; WA, Washington; WHMIS, Workplace Hazardous Materials Information System

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1 October 2017

Revisions

This is the first version of this SDS.

Disclaimer

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