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

Contact information

General
Fluidigm Corporation
2 Tower place, Suite 2000, 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® Antibody Labeling Kit (Cd)

Synonyms
None identified

Trade names
None identified

Chemical family
Mixture - contains metal salt.

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 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]
Germ Cell Mutagenicity - Category 2. Carcinogenic - Category 1A. Reproductive Toxicity - Category 2. Specific Target Organ Toxicity (repeated exposure) - Category 2.

Other/Supplemental
AU Hazard Classification (NOHSC) Hazardous Substance. Hazardous goods.

Label elements

GHS hazard pictogram

GHS signal word
Danger

GHS hazard statements
H341 - Suspected of causing genetic defects.
H350 - May cause cancer.
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 - May cause damage to kidney and lung through prolonged or repeated exposure.

GHS precautionary statements
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/eye protection/face protection.
P308 + P313 - IF exposed or concerned: get medical advice/attention.
SECTION 2 - HAZARDS IDENTIFICATION...continued

P405 - Store locked up.
P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.
P260 - Do not breathe dust/mist/vapors/spray.

Other hazards

Contains cadmium nitrate and ammonium acetate. Cadmium nitrate is an eye, skin, and respiratory irritant, and ammonium acetate is an eye and skin irritant. Exposure to cadmium nitrate may cause kidney and lung damage, loss of sense of smell, nose ulceration, shortness of breath, and mild anemia. Cadmium nitrate has been associated with increased incidence of lung cancer and increased incidence of prostate cancer following occupational exposure, although later studies for prostate cancer will not consistent. Cadmium increased chromosomal aberrations in three of five studies in human peripheral blood lymphocytes of workers exposed to cadmium and other metals. No increase in frequency of chromosomal aberrations were seen in workers from a cadmium pigment plant. No increase in sister chromatid exchanges was seen in one study of workers exposed to cadmium.

Note

This substance 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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>EINECS/ELINCS#</th>
<th>Amount</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Acetate</td>
<td>631-61-8</td>
<td>211-162-9</td>
<td>&lt;1%</td>
<td>EI2: H319; SI2: H315; AA3: H402; CD1</td>
</tr>
</tbody>
</table>

Note

The ingredient(s) listed above are considered dangerous/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.
SAFETY DATA SHEET

Product Identifier: Maxpar® Antibody Labeling Kit (Cd)
Catalog ID numbers: 201106-201116

SECTON 4 - FIRST AID MEASURES ... continued

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
May emit carbon monoxide, carbon dioxide, nitrogen-, chloride-, and metal-containing compounds.

Flammability/Explosivity
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). 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
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
Keep from contact with clothing and other combustible materials. Store at 2-8°C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled. Do not store in metal or glass containers. Do not store in direct sunlight. Do not store near organic substances.

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

<table>
<thead>
<tr>
<th>Compound</th>
<th>Issuer</th>
<th>Type</th>
<th>OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (II) Nitrate</td>
<td>OSHA</td>
<td>PEL</td>
<td>0.005 mg/m³</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TLV</td>
<td>0.01 mg/m³</td>
</tr>
</tbody>
</table>

### Exposure/Engineering controls
None required for normal handling of packaged product. If handling bulk product and/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 mist/aerosol/spray-generating points. Emphasis is to be placed on closed material transfer systems and process containment, with limited open handling. High-energy operations such as spraying or fluidizing should be done within an approved emission control or containment system.

### Respiratory protection
None required for normal handling of packaged product. If handling bulk product and/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 fitted air-purifying respirator with appropriate HEPA filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a powered air-purifying respirator equipped with appropriate 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 normal handling of packaged product. If handling bulk product and/or vials are opened/crushed/broken: Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended 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 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information identified.</td>
</tr>
<tr>
<td>pH</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Fully soluble</td>
</tr>
<tr>
<td>Solvent solubility</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information identified.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>For Cadmium nitrate: Strong oxidizing agent.</td>
</tr>
</tbody>
</table>

Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular formula</td>
<td>Not applicable (Mixture)</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not applicable (Mixture)</td>
</tr>
</tbody>
</table>

SECTION 10 - STABILITY AND REACTIVITY

Reactivity

No information identified.

Chemical stability

No information identified.
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 Limited data was available on product formulation. The following information is for the ingredients where applicable.

Information on toxicological effects

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

Acute toxicity

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Route</th>
<th>Species</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (II) Nitrate</td>
<td>LD₅₀</td>
<td>Oral</td>
<td>Rat</td>
<td>300 mg/kg</td>
</tr>
<tr>
<td>Ammonium Acetate</td>
<td>LD₅₀</td>
<td>Intravenous</td>
<td>Mouse</td>
<td>47 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD₅₀</td>
<td>Intraperitoneal</td>
<td>Rat</td>
<td>632 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD₅₀</td>
<td>Intraperitoneal</td>
<td>Mice</td>
<td>736 mg/kg</td>
</tr>
</tbody>
</table>

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  Parenteral administration of cadmium salts produced adverse effects on the testes and ovaries in animal studies. Many of these effects were preventable by administration of zinc compounds (no further details were identified).

Developmental toxicity  Adverse effects on the placenta, and fetal anemia, growth retardation, teratogenicity, and embryonic and fetal death have been observed following cadmium administration by oral, inhalation, and/or parenteral administration routes. No further details were identified.

Genotoxicity  Positive in an Ames test. Cadmium was positive in a number of in vivo and in vitro assays for DNA strand breaks, mutations, chromosomal damage, aneuploidy, and cell transformation.

Carcinogenicity  Various cadmium salts have been associated with leukemia, malignant tumors of the male reproductive system (including prostate, interstitial cell tumors of the testis) and lung, and benign injection site tumors following oral, intramuscular, subcutaneous, and/or inhalation studies in mice and rats. Doses and durations were not identified. Zinc deficiency appears to increase the carcinogenic potential of cadmium following systemic or inhalation exposure. Effects may be reduced or preventable by administration of zinc compounds. Cadmium is listed as a Group 1 (human carcinogen) by IARC, a known carcinogen by NTP and OSHA, and an A2 (suspected human carcinogen) by ACGIH.

Aspiration hazard  No data available.

Human health data  See "Section 2 - Other Hazards"
SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Species</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (II) Nitrate</td>
<td>EC50</td>
<td>Microtox</td>
<td>1.62 mg/L</td>
</tr>
<tr>
<td>Ammonium Acetate</td>
<td>LC50</td>
<td>Cyprinus carpio</td>
<td>1.06 mg/L</td>
</tr>
</tbody>
</table>

Persistence and Degradability
Persistence is unlikely based on water solubility.

Bioaccumulative potential
No data identified for the mixture. Cadmium is able to bioaccumulate in both flora and fauna, and has potential to biomagnify in some food chains.

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. Releases to the environment should be avoided.

SECTION 13 - DISPOSAL CONSIDERATIONS

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

SECTION 14 - TRANSPORT INFORMATION

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

UN number
None assigned.

UN proper shipping name
None assigned.

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.
SAFETY DATA SHEET

Product Identifier: Maxpar® Antibody Labeling Kit (Cd)
Catalog ID numbers: 201106-201116

SECTION 15 - REGULATORY INFORMATION...continued

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


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; 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  May-2020

Revisions  Revision 02: CHG-001511
Summary of revision: Updated Fluidigm Corporate Address in section 1, Issue date and revision in headed, footer and section 16.
SECTION 16 - OTHER INFORMATION

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. This product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. 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.
SAFETY DATA SHEET

Product Identifier: Maxpar® Antibody Labeling Kit (Cd)  
Catalog ID numbers: 201106-201116

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