

SAFETY DATA SHEET

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 Part Number 101-9308, Rgt Kit, Advanta™ RNA-Seq Reagent Kit, RM, dT Oligo Conjugated Beads, Module 4

Part Number 101-9076: Bulk, Bead Suspension Buffer w/ Oligo- conjugated beads

Synonyms None identified

Trade names None identified

Chemical family Mixture

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.

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System [GHS] Not classified

Label elements

GHS hazard pictogram None required

GHS signal word None required

SECTION 2 - HAZARDS IDENTIFICATION ...continued

GHS hazard statements	None required
GHS precautionary statements	None required
Other hazards	The potential health hazards associated with exposure/handling of this mixture are unknown; no data specific for the mixture were identified. The following data describe the hazards of individual ingredients, where applicable.
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.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ELIN CS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Tris-Hydrochloride	1185-53-1	214-684-5	2%	SI2: H315; EI2: H319; STOT- SE3: H335
Triton X-100	9002-93-1	N/A	1%	ATO4:H302; SI2:H315; EI2:H319; AA1:H400
Sodium azide	26628-22-8	247-852-1	0.05%	ATO2: H300; AA1: H400; CA1: H410; EUH032

Note	The ingredients listed above are considered hazardous and/or are one of the primary ingredients. 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. 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.

SECTION 4 - FIRST AID MEASURES ...continued

Ingestion	If swallowed, call a physician immediately. 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. If signs/ symptoms occur, get medical attention.
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	In case of fire in the surroundings: Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate.
Specific hazards arising from the substance or mixture	May emit carbon monoxide, carbon dioxide, chlorine-containing compounds, and oxides of nitrogen.
Flammability/Explosivity	No explosivity or flammability data identified. As product is an aqueous solution, it is not expected to be flammable or explosive.
Advice for firefighters	In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Wash all equipment thoroughly 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	Avoid release to the environment.
Methods and material for containment and cleaning up	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.

SECTION 6 - ACCIDENTAL RELEASE MEASURES ...continued

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, other mucous membranes or clothing. Wash thoroughly after handling. Use with adequate ventilation. Keep container tightly closed. Avoid breathing vapor/mist/spray.

Conditions for safe storage including any incompatibilities Store at 4 °C in a well-ventilated area, away from incompatible materials.

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>
Tris-Hydrochloride	--	--	--
Triton X-100	--	--	--

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

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

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

Exposure/Engineering controls	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	Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. An approved and properly fitted air-purifying respirator with HEPA filters may be considered to 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. 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.
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	Slurry
Color	Brown
Odor	No information identified.
Odor threshold	No information identified.
pH	No information identified.
Melting point/freezing point	No information identified.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ...continued

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	Miscible with 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 formula	Not applicable (Mixture)
Molecular weight	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	No information identified.
Possibility of hazardous reactions	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 active ingredient and/or the individual ingredients where applicable.

Information on toxicological effects

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

Acute toxicity

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Tris-Hydrochloride	--	--	--	--
Triton X-100	LD ₅₀	Oral	Rat	1800 mg/kg
	LD ₅₀	Intravenous (IV)	Mouse	1200 mg/kg
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 Tris-Hydrochloride and Triton X-100 are considered irritating to eyes, skin, and respiratory tract.

Sensitization No data on product formulation.

STOT-single exposure No data on product formulation.

STOT-repeated exposure/Repeat-dose toxicity No data on product formulation.

Reproductive toxicity No data on product formulation.

Developmental toxicity No data on product formulation.

Genotoxicity No data on product formulation.

Carcinogenicity No data on product formulation. None of the components of the product/mixture present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

Aspiration hazard No data on product formulation.

Human health data See "Section 2 - Other Hazards"

SECTION 11 - TOXICOLOGICAL INFORMATION ...continued

Additional information The toxicological properties of this mixture have not been fully characterized.

SECTION 12 - ECOLOGICAL INFORMATION**Toxicity**

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Tris-Hydrochloride	--	--	--
Triton X-100	EC ₅₀ (96 h)	Green Algae	0.21 mg/L
	LC ₅₀ (96 h)	Fathead minnow	4.5 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

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 on product formulation.

Bioaccumulative potential No data on product formulation.

Mobility in soil No data on product formulation.

Results of PBT and vPvB assessment Not performed.

Other adverse effects No data on product formulation.

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 Used product should be disposed of according to local, state, and federal regulations. Do not discharge into sanitary drains (e.g. non-process drains) or down the toilet. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. 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 under US DOT, Canada TDG, IATA, IMDG or EU ADR/RID.
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 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	ATO2 - Acute Toxicity (Oral) Category 2. H300 - Fatal if swallowed. ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. SI2 - Skin irritant Category 2. H315 - Causes skin irritation. EI2 - Eye irritant Category 2. H319 - Causes serious eye irritation. STOT-SE3 - Specific Target Organ Toxicity Following Single Exposure Category 3. H335 - May cause respiratory irritation. 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.
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	August 2019; Refer to eQMS for actual release date.
Revisions	Revision [02]: CHG-000322, Changed Product Identifier in Section 1 from mRNA to RNA, Updated header Revision A: (SSF) ECN-3582; This is the first version of this SDS.
Disclaimer	Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use 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 Safety Data Sheet before handling product. For Research Use Only. Not for use in diagnostic procedures.