

SAFETY DATA SHEET

Product Identifier: Advanta™ FFPE RNA Extraction Kit, 50 reactions
 Catalog ID numbers: Cat# 101-6773, 101-6449, 101-6721

SDS ID: 101-7022 Revision A2

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	Advanta™ FFPE RNA Extraction Kit, 50 reactions
Synonyms	None identified
Trade names	None identified
Chemical family	Mixture
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 health and safety issues associated with the handling of the formulated product.

SECTION 2 - HAZARDS IDENTIFICATION

This product contains nine (9) parts. The following provides the hazard classification for each part.

Part 1: RNA Enhancer (Part #: 101-6443)

Classification of the substance or mixture

Globally Harmonized System [GHS]	Irritant (skin) - Category 2. Irritant (eye) - Category 2.
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Label elements

GHS hazard pictogram



GHS signal word	Warning
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GHS hazard statements	H315 - Causes skin irritation. H319 - Causes serious eye irritation.
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GHS precautionary statements	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. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P321 - Specific treatment (see First Aid information on product label and/or Section 4 of the SDS). P332 + P313 - If skin irritation occurs: Get medical advice/attention. P337 + P313 - If eye irritation persists: Get medical advice/attention. P362 - Take off contaminated clothing and wash before reuse.
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Other hazards	Contains sodium dodecyl sulfate. May cause eye/skin irritation. Part/mixture not yet fully tested.
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Note This mixture is classified as hazardous 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). The pharmacological, toxicological and ecological properties of this mixture have not been fully characterized.

Part description and number	GHS Hazard Classification
Part 2: FFPE Extraction Buffer (101-6441)	None required.
Part 3: FFPE Purification Reagent (101-6442)	None required.
Part 4: DNase Buffer (10x) (101-6444)	None required.
Part 5: EDTA (50 mM) (101-6445)	None required.
Part 6: DNase I (2 units/μL) (101-6446)	None required.
Part 7: Proteinase K (800 units/mL) (101-6447)	None required.
Part 8: AMPure XP beads, 5 mL (101-5998)	None required.
Part 9: Dilution Reagent (100-8725)	None required.

Other hazards May cause eye/skin irritation. Part/mixture not yet fully tested.

Note Parts 2-9 are not classified as hazardous according to Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), 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

Part 1: RNA Enhancer (Part #: 101-6443)

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Sodium dodecyl sulfate	151-21-3	205-788-1	10-15%	ATO4: H302; ATD3: H311; SI2: H315; EI2: H319; FS2: H228; STOT-S3: H335

Note Sodium dodecyl sulfate is considered hazardous. Amounts are listed as ranges; the exact percentage of composition is withheld as a trade secret. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

Part 2-9

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Part 2: FFPE Extraction Buffer (Part#: 101-6441)	N/A (mixture)	N/A	~100%	Not classified
Part 3: FFPE Purification Reagent (Part#: 101-6442)	N/A (mixture)	N/A	~100%	Not classified
Part 4: DNase Buffer (10x) (Part#: 101-6444)	N/A (mixture)	N/A	~100%	Not classified
Part 5: EDTA (50 mM) (Part#: 101-6445)	N/A (mixture)	N/A	~100%	Not classified
Part 6: DNase I (2 units/μL) (Part#: 101-6446)	N/A (mixture)	N/A	~100%	Not classified
Part 7: Proteinase K (800 units/mL) (Part#: 101-6447)	N/A (mixture)	N/A	~100%	Not classified
Part 8: AMPure XP beads, 5 mL (Part#: 101-5998)	N/A (mixture)	N/A	~100%	Not classified
Part 9: Dilution Reagent (Part#: 100-8725)	N/A (mixture)	N/A	~100%	Not classified

Note The components within Parts 2-9 are non-hazardous and/or present at amounts below reportable limits.

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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	In case of accidental inhalation, move exposed subject to fresh air. If signs/symptoms occur or if concerned, get medical attention.
Ingestion	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	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, oxides of sulfur, and other sulfur-, and phosphorus-containing compounds.
Flammability/Explosivity	As parts of the kit are 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). 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.

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SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling Wear appropriate protective equipment when handling. Avoid breathing dust/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

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Sodium dodecyl sulfate	--	--	--

Exposure/Engineering controls None required for normal handling of packaged product. 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 None required for normal handling of packaged product. If vials are crushed or broken: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. 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 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 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 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	Liquids (supplied as individually packaged reagents)
Color	No information identified.
Odor	No information identified.
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	No information identified.
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	No information identified.
Chemical stability	Stable under normal handling and storage conditions.
Possibility of hazardous reactions	No information identified.

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Conditions to avoid Keep away from incompatible materials.
Incompatible materials No information identified.
Hazardous decomposition products No information identified.

SECTION 11 - TOXICOLOGICAL INFORMATION

Note No data were identified for the product/mixture. The following information is for the individual hazardous ingredients contained in some parts of the kit.

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 dodecyl sulfate	LC50	Inhalation	Rat	>3900 mg/m ³
	LD50	Oral	Rat	977 - 1427 mg/kg
	LD50	Intravenous	Rat	118 mg/kg
	LD50	Intravenous	Mouse	118 mg/m ³
	LD50	Dermal	Rabbit	580 mg/kg
	LD50	Oral	Mouse	2700 - 2800 mg/kg

Irritation/Corrosion Sodium dodecyl sulfate was irritating to rabbit eyes and skin. Irritation of the skin and respiratory system was reported in humans.

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. The ingredients in this mixture are 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 dodecyl sulfate	EC50/72h	Scenedesmus supspicatus (algae)	53 mg/L
	LC50/96h	Various Fish Species	~ 1.2 - 29 mg/L
	EC50/48h	Daphnia magna	1.8 - 31 mg/L

Persistence and Degradability No data identified.

Bioaccumulative potential No data identified.

Mobility in soil No data identified.

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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. 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	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
Special precautions for users	Due to lack of data, 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 generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local/regional authorities for more information.
Chemical safety assessment	Not conducted.
TSCA status	Sodium dodecyl sulfate is listed. The remaining components of this product/mixture are not listed.
SARA section 313	Not listed.
California proposition 65	Not listed.
Component Analysis - State	The components of this product/mixture are not listed
Component Analysis – Chemical Inventory	Sodium dodecyl sulfate 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.

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SECTION 16 - OTHER INFORMATION

NFPA Ratings	Sodium Dodecyl Sulfate	Health: 2	Fire: 3	Reactivity: 2
Full text of H phrases and GHS classifications	<p>ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. ATD3 - Acute Toxicity (Dermal) Category 3. H311 - Toxic in contact with skin. SI2 - Skin irritant Category 2. H315 - Causes skin irritation. E12 - Eye irritant Category 2. H319 - Causes serious eye irritation. FS2 - Flammable Solid Category 2. H228 - Flammable Solid. STOT-S3 - Specific Target Organ Toxicity Following Single Exposure Category 3. H335 - May cause respiratory irritation.</p>			
Sources of data	Information from published literature and internal company data.			
Abbreviations	<p>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; NIOSH - The National Institute for Occupational Safety and Health; NJ - New Jersey; 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; 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; US - United States; WHMIS - Workplace Hazardous Materials Information System</p>			
Revisions	Rev A: (SSF) ECN-2940; Refer to PDM for date released; This is the first version of this SDS.			
Disclaimer	<p>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.</p>			