

10X AR6 Buffer, 250 mL

AR600250ML

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SAFETY DATA SHEET**SECTION 1. IDENTIFICATION****Product identifier used on the label**: **10X AR6 Buffer, 250 mL****Other means of identification** : AR600250ML**Recommended use of the chemical and restrictions on use**: Research and development only.
No restrictions on use known.**Chemical family**

: Mixture

Name, address, and telephone number of the supplier:**Akoya Biosciences, Inc.**100 Campus Dr,
6th Floor
Marlborough, MA, USA
01752

Supplier's Telephone # : (855) 896 8401

Name, address, and telephone number of the manufacturer:

Refer to supplier

24 Hr. Emergency Tel # : INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)**SECTION 2. HAZARDS IDENTIFICATION****Classification of the chemical**

Clear liquid.. Odorless.

Most important hazards:

Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is not classified as hazardous under U.S. OSHA regulations (29 CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements*Hazard pictogram(s)*

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Hazard statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Precautionary statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Other hazards

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning. Inhalation of mists or sprays may mildly irritate the upper respiratory tract and cause coughing or sneezing. May cause slight eye and skin irritation. May cause gastrointestinal irritation.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
No hazardous ingredients above concentration cut-offs	Not applicable.	No information available.	N/Ap

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do not induce vomiting. Never give anything by mouth to a person who is unconscious or is having convulsions. Call a physician.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. If irritation or symptoms develop, seek medical attention.
- Skin contact* : Wash off with plenty of water. If irritation or symptoms develop, seek medical attention. Wash contaminated clothing before reuse.
- Eye contact* : Immediately flush eye(s) with plenty of water. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

- : Inhalation of mists or sprays may mildly irritate the upper respiratory tract and cause coughing or sneezing.
 May cause slight eye and skin irritation. Direct eye contact may cause slight redness.
 Direct skin contact may cause temporary redness.
 Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : None known.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not classified as flammable. Toxic fumes, gases or vapors may evolve on burning.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not classified as flammable.

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides (NO_x); Hydrochloric acid ;Sodium oxides. ; Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Wear appropriate protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the National Response Center in the United States (phone: 1-800-424-8802).
 US CERCLA Reportable quantity (RQ): None reportable.

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use with adequate ventilation. Wear suitable protective equipment during handling. Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Conditions for safe storage : Store in cool/well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles. Keep refrigerated.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases; Nitrogen compounds

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>					
	<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
		<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
No hazardous ingredients above concentration cut-offs	N/Ap	N/Ap	N/Ap	N/Ap	

Exposure controls

Ventilation and engineering measures

- : Provide adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

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- Skin protection** : Gloves impervious to the material are recommended. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear sufficient clothing to prevent skin contact.
- Eye / face protection** : Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles.
- Other protective equipment** : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.
- General hygiene considerations** : Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Clear liquid.
- Odour** : Odorless.
- Odour threshold** : N/Av
- pH** : N/Av
- Melting Point/Freezing point** : N/Av
- Initial boiling point and boiling range** : 100°C
- Flash point** : None.
- Flashpoint (Method)** : N/Av
- Evaporation rate (BuAe = 1)** : N/Av
- Flammability (solid, gas)** : Not applicable.
- Lower flammable limit (% by vol.)** : N/Av
- Upper flammable limit (% by vol.)** : N/Av
- Oxidizing properties** : None.
- Explosive properties** : Not explosive
- Vapour pressure** : 23 hPa
- Vapour density** : 0.633
- Relative density / Specific gravity** : 1
- Solubility in water** : Soluble
- Other solubility(ies)** : N/Av
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : N/Av
- Auto-ignition temperature** : N/Av
- Decomposition temperature** : 2000 °C
- Viscosity** : N/Av
- Volatiles (% by weight)** : N/Av
- Volatile organic Compounds (VOC's)** : N/Av
- Absolute pressure of container** : N/Av
- Flame projection length** : N/Av
- Other physical/chemical comments** : No additional information.

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SECTION 10. STABILITY AND REACTIVITY

- Reactivity** : Not normally reactive.
- Chemical stability** : Stable under normal conditions.
- Possibility of hazardous reactions** : Hazardous polymerization does not occur.
- Conditions to avoid** : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
- Incompatible materials** : Strong oxidizing agents
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

- Routes of entry inhalation** : YES
- Routes of entry skin & eye** : YES
- Routes of entry Ingestion** : YES
- Routes of exposure skin absorption** : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Inhalation of mists or sprays may mildly irritate the upper respiratory tract and cause coughing or sneezing.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation. Direct eye contact may cause slight redness.

Potential Chronic Health Effects

- : None known or reported by the manufacturer.

Mutagenicity

- : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

- : Not expected to have carcinogenic effects. No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : This product is not expected to cause reproductive or developmental effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : According to the classification criteria of Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause specific target organ toxicity (STOT) through single or repeated exposures.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : None known or reported by the manufacturer.

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Toxicological data : Not classified for acute toxicity based on available data. No data is available on the product itself.

See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
No hazardous ingredients above concentration cut-offs	N/Ap	N/Ap	N/Ap

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms.
 No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Persistence and degradability : The product itself has not been tested.

Bioaccumulation potential : The product itself has not been tested.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
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Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	de minimus Concentration
					Toxic Chemical	
No hazardous ingredients above concentration cut-offs	information available	NL	None.	None.	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
No hazardous ingredients above concentration cut-offs	formation avai	No	N/Ap	No	No	No	No	No	NS

Canadian Information:

Canadian Environmental Protection Act (CEPA): All ingredients are listed on the DSL, or are exempted materials.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
No hazardous ingredients above concentration cut-offs	formation avai	All components are listed or exempted.	All components are listed or exempted.	All are listed or exempted.	All components are listed or exempted.	All components are listed or exempted.	All components are listed or exempted.	All components are listed or exempted.

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EC50: Effective Concentration 50%
- ENCS: Existing and New Chemical Substances EPA: Environmental Protection Agency
- IARC: International Agency for Research on Cancer
- IECSC: Inventory of Existing Chemical Substances
- IMDG: International Maritime Dangerous Goods Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NOEC: No observable effect concentration
- NTP: National Toxicology Program
- OECD: Organisation for Economic Co-operation and Development
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible exposure limit

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PICCS: Philippine Inventory of Chemicals and Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
- 2. International Agency for Research on Cancer Monographs, searched 2019.
- 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
- 4. Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - June 2019 version.
- 6. California Proposition 65 List - June 2019 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2019.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for: Akoya Biosciences, Inc. 100 Campus Dr., 6th Floor Marlborough, MA 01752 Telephone: (855) 896 8401	
Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com	

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