Akoya Biosciences, Inc.
100 Campus Dr,6th Floor
Marlborough, MA, USA, 01752
Telephone: (855) 896 8401

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

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

1.1 Product identifier : **PhenoCycler (Formerly CODEX™) Assay Kit - Nuclear Stain**

Product Code(s) : 232121, 7000003

1.2 Relevant identified uses of the substance or mixture and uses advised against

: Reagents for iterative cycles of revealing and removing tags. For use in CODEX MPI fluidics instrument.
Use pattern: Consumer use; professional use
No restrictions on use known.

1.3 Details of the supplier of the safety data sheet:

Akoya Biosciences, Inc.
100 Campus Dr,
6th Floor
Marlborough, MA, USA
01752

Supplier Telephone Number

: Austria +32 (2) 3203033 | Belgium +32 (2) 32023033 | Denmark +45 (8) 0703552 | Finland +358 (9) 42452710
France +33 (0) 805119658 | Poland +48 (3) 23074035 | Ireland +353 (1) 800851675 | Italy +39 800768419
Netherlands +31 (8) 000235193 | Sweden +46 (84) 4685042 | Spain +34 91198427 | Switzerland +41 (3) 15281579
United Kingdom +44 (20) 45252848 | United States of America (855) 896 8401

1.4 Emergency Telephone Number

: +1 (352) 323-3500 (INFOTRAC - United States of America)

1.5 National Contact : customercareemea@akoyabio.com

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Yellow liquid. No odour.

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.

The product is not classified as hazardous according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Hazard pictogram(s)

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None required according to Regulation (EC) No. 1272/2008.
Hazardous components which must be listed on the label:
None.
Signal word:
None required according to Regulation (EC) No. 1272/2008.

Hazard statements:
None required according to Regulation (EC) No. 1272/2008.

Precautionary statements:
None required according to Regulation (EC) No. 1272/2008.

Supplemental Hazard Statements:
None required according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

Other hazards which do not result in classification:
Burning produces obnoxious and toxic fumes. May be mildly irritating to skin and respiratory system. Direct eye contact may cause slight or mild, transient irritation. May cause gastrointestinal irritation.

PBT assessment:
This mixture contains no substance(s) above reportable levels which are considered to be persistent, bioaccumulating nor toxic (PBT), or very persistent and very bioaccumulating (vPvB).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical nature - Mixture of: Water; Fluorescent blue DNA dye.

The following substances shall be indicated according to legislation:

Substance name	CAS No	EC No.	Reach Registration No.	% Weight	Classification according to Regulation (EC) nr. 1272/2008	SCL, M-factor, ATE
No hazardous ingredients above concentration cut-offs	N/Av	Not applicable.	Not applicable.	**Not applicable.**	Not applicable	Not applicable.

SECTION 4. FIRST-AID MEASURES

4.1 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. When symptoms persist or in all cases of doubt, seek medical advice.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. When symptoms persist or in all cases of doubt, seek medical advice.

Skin contact : For skin contact, wash with soap and water while removing contaminated clothing. When symptoms persist or in all cases of doubt, seek medical advice. Wash contaminated clothing before reuse.

Eye contact : Immediately flush eye(s) with plenty of water. When symptoms persist or in all cases of doubt, seek medical advice.

4.1.2 Self-protection for the first aider

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: None known or reported by the manufacturer.

4.2 Most important symptoms and effects, both acute and delayed

: Direct eye contact may cause slight or mild, transient irritation. Direct eye contact may cause slight redness.
May be mildly irritating to skin and respiratory system. May cause coughing and breathing difficulties. Direct skin contact may cause temporary redness.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. `

4.3 Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 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.

5.2 Special hazards arising from the substance or mixture

: Not classified as flammable. However, may burn if exposed to extreme heat and flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; Hydrogen chloride; Nitrogen oxides (NOx); Other unidentified organic compounds.

5.3 Advice 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

: Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Wear appropriate protective equipment.

6.2 Environmental precautions

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

6.3 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.

6.4 Reference to other sections

: Refer to protective measures listed in sections 7 and 8. Refer to Section 13 for disposal of material.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

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: 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. Empty containers retain residue and can be dangerous.

7.2 Conditions for safe storage, including any incompatibilities

: 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. Store away from incompatible materials (see Section 10 of the SDS).
Recommended storage temperature: - 20°C

7.3 Specific end use(s) : Reagents for iterative cycles of revealing and removing tags. For use in CODEX MPI fluidics instrument.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Exposure Limits:

Chemical Name	Exposure Limits	Type	Notes
No hazardous ingredients a	**ove concentration cut-offs** Not applicable.	European Union (OEL)	Not applicable.

Biological Exposure Indices:

No biological exposure limits noted for the ingredient(s).

Derived No Effect Level (DNEL):
No information available.

Predicted No Effect Concentration (PNEC):
No information available.

8.2 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 : In case of insufficient ventilation wear suitable respiratory equipment. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Seek advice from respiratory protection specialists.

Skin protection : Gloves impervious to the material are recommended. Wear as appropriate: Latex gloves; Neoprene gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Wear sufficient clothing to prevent skin contact.

Eye / face protection : Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. See also EN 166.

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.

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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.

8.3 Controlo da exposição ambiental

: Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state : Yellow liquid.
Colour : yellow
Odour : No odour.
Odour threshold : No information available.
pH : No information available.
Flash point : > 93.3°C (200°F) (based on ingredients)
Flashpoint (Method) : No information available.
Lower flammable limit (% by vol.)
: No information available.
Upper flammable limit (% by vol.)
: No information available.
Auto-ignition temperature
: No information available.
Decomposition temperature
: No information available.
Oxidizing properties : None known.
Explosive properties : Not explosive
Initial boiling point and boiling range
: > 100°C (212°F) (based on ingredients)
Melting/Freezing point : No information available.
Relative density : No information available.
Solubility in water : Soluble
Other solubility(ies) : No information available.
Vapour pressure : No information available.
Vapour density : No information available.
Partition coefficient: n-octanol/water
: No information available.
Viscosity : No information available.
Evaporation rate (BuAe = 1)
: No information available.
Particle characteristics : Not applicable.

9.2 Other Information

Volatiles (% by weight) : No information available.
Volatile organic Compounds (VOC's)
: No information available.
Other physical/chemical comments
: No additional information.

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SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity : Not normally reactive.

10.2 Chemical stability : Stable under normal conditions.

10.3 Possibility of hazardous reactions

: Hazardous polymerization does not occur.

10.4 Conditions to avoid : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

10.5 Incompatible materials

: Strong oxidizing agents (Perchlorates; Permanganates; Iodine pentafluoride; Silver fluoride, etc.)

10.6 Hazardous decomposition products

: None known.
In the event of fire the following can be released: Carbon oxides; Hydrogen chloride; Nitrogen oxides (NOx); Other unidentified organic compounds.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects:

Acute toxicity : According to the classification criteria of the European Union, this product is not considered as being an acutely toxic chemical.

Skin corrosion/Irritation : According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Serious eye damage/irritation

: According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

Respiratory or skin sensitisation

: According to the classification criteria of the European Union, this product is not considered as being an allergic respiratory sensitiser.
According to the classification criteria of the European Union, this product is not considered as being an allergic skin sensitiser.

Germ cell mutagenicity : Contains no ingredient listed as a mutagen.

Carcinogenicity : Contains no ingredient listed as a carcinogen.

Reproductive toxicity : Contains no ingredient listed as toxic to reproduction.

STOT-single exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through a single exposure.

STOT-repeated exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through repeated exposures.

Aspiration hazard : According to the classification criteria of the European Union, this product is not considered as being an aspiration hazard to humans.

Routes of exposure : Inhalation; Skin contact; Eye contact; Ingestion

Effects of acute exposure : Inhalation: Mild respiratory irritant. May cause coughing and breathing difficulties.

Skin contact: May cause mild skin irritation. Direct skin contact may cause temporary redness.

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

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

Potential Chronic Health Effects

: None known or reported by the manufacturer.

11.1.1 Acute Toxicity

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Toxicological data : No data is available on the product itself.

See below for individual ingredient acute toxicity data.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
No hazardous ingredients above concentration cut-offs	Not applicable.	Not applicable.	Not applicable.

11.2 Information on other Hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity : 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.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
No hazardous ingredients above concentration cut-offs	N/Av	Not applicable.	Not applicable.	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
No hazardous ingredients above concentration cut-offs	N/Av	Not applicable.	Not applicable.	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
No hazardous ingredients above concentration cut-offs	N/Av	Not applicable.	Not applicable.	None.

12.2 Persistence and degradability

: The product itself has not been tested.

12.3 Bioaccumulation potential

: The product itself has not been tested.

12.4 Mobility in soil : The product itself has not been tested.

12.5 Results of PBT and vPvB assessment

SAFETY DATA SHEET

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: This mixture contains no substance(s) above reportable levels which are considered to be persistent, bioaccumulating nor toxic (PBT), or very persistent and very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

: None known or reported by the manufacturer.

12.7 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.

12.8 Additional information : None known or reported by the manufacturer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

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 of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	**14.1 UN Number**	**14.2 UN proper shipping name**	**14.3 Transport hazard class(es)**	**14.4 Packing Group**	*Label*
ADR/RID	None.	not regulated	not regulated	none	
ADR/RID Additional information	Not classified as dangerous for conveyance in the meaning of the regulations for the transport of dangerous goods by road and rail.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

14.5 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.

14.6 Special precautions for user

: Appropriate advice on safety must accompany the package.

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

: Not applicable.

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SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

: Classification according to Regulation (EC) No. 1272/2008 on the classification of hazardous substances and mixtures.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:
None of the components are specifically listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended:
None of the components are specifically listed.

Directive 2012/18/EU (Seveso III) on the control of major-accident hazards involving dangerous substances:
None.

Directive 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work:
None of the components are specifically listed.

Directive 94/33/EC on the protection of young people at work:
None of the components are specifically listed.
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended [including Regulation (EU) 2015/830].

Follow national regulation for work with chemical agents.

German legislation on substances that are hazardous to water AwSV: Water hazard class (Germany) 1 (self classified)

15.2 Chemical safety assessment

: A chemical safety assessment has not been carried out by the Manufacturer of this product.

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SECTION 16. OTHER INFORMATION

Legend : ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstract Services
CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
EC: European Community
EC50: Effective Concentration 50%
ECHA: European Chemicals Agency
EN: European Standard
EU: European Union
HSDB: Hazardous Substances Data Bank
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
NOEC: No observable effect concentration
OECD: Organisation for Economic Co-operation and Development
OEL: National occupational exposure limits
QSAR: Quantitative structure-activity relationship
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
RTECS: Registry of Toxic Effects of Chemical Substances
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
WEL: Workplace Exposure Limit

Information Source : 1. Material Safety Data Sheet from manufacturer.
2. Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases
3. European Chemicals Agency, Classification Legislation
4. OECD - The Global Portal to Information on Chemical Substances

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Reviewed Date SDS (dd/mm/yyyy) : 15/12/2022

Revision No. : 2

Revision Information : (M)SDS sections updated :All (format change)

Regulation and Procedure :

Not applicable.

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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Prepared for: Akoya Biosciences, Inc. 100 Campus Dr., 6th Floor Marlborough, MA 01752 Telephone: (855) 896 8401	
Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com	

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