SANTA CRUZ BIOTECHNOLOGY, INC.

Intracellular FCM System: sc-45063

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

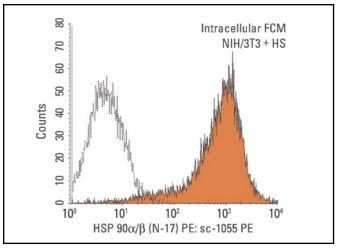
BACKGROUND

Intracellular flow cytometry provides a powerful, newly optimized approach for quantitative analysis of expression of a broad range of cell signaling proteins. Santa Cruz Biotechnology, Inc. now offers the widest range of fluorochrome coupled antibody reagents specifically formatted for this application.

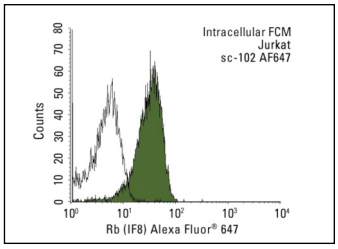
PRODUCT

The Intracellular FCM System includes one bottle each of the following reagents: FCM Lysing solution, FCM Fixation buffer, FCM Permeabilization buffer and FCM Wash buffer. The contents of each bottle provide sufficient reagent for 100 tests. The products comprising the Intracellular FCM System have been optimized for intracellular flow cytometry studies using PE- and FITC-conjugated monoclonal and polyclonal purified antibodies developed by Santa Cruz Biotechnology for this purpose.

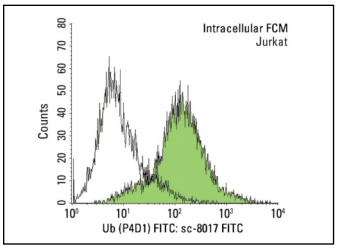
DATA



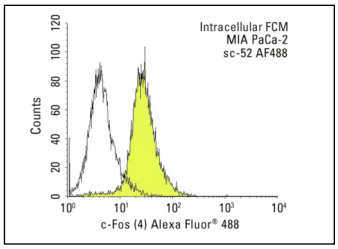
HSP 90α/β (N-17) PE: sc-1055 PE. Intracellular FCM analysis of fixed and permeabilized, heat-shocked NIH/3T3 cells. Black line histogram represents the isotype control, normal goat IgG: sc-3992.



Rb (IF8) AF647: sc-102 AF647. Intracellular FCM analysis of fixed and permeabilized Jurkat cells. Black line histogram represents the isotype control, normal mouse IgG_1: sc-24636.



Ub (P4D1) FITC : sc-8017 FITC. Intracellular FCM analysis of methanol permeabilized Jurkat cells. Solid black line histogram represents control mouse IgG_1.



c-Fos (4) AF488: sc-52 AF488. Intracellular FCM analysis of fixed and permeabilized MIA PaCa-2 cells. Black line histogram represents the isotype control, normal rabbit IgG: sc-45068.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

INTRACELLULAR FCM REAGENTS

FCM Lysing solution	sc-3621	100 tests
FCM Fixation buffer	sc-3622	100 tests
FCM Permeabilization buffer	sc-3623	100 tests
FCM Wash buffer	sc-3624	100 tests
Intracellular FCM System	sc-45063	100 tests

Lysing solution and support buffers have been optimized for Intracellular FCM studies using PE- and FITC-conjugated monoclonal and polyclonal purified antibodies developed by Santa Cruz Biotechnology, Inc. for this purpose. The Intracellular FCM System includes one bottle each of the following reagents: FCM Lysing solution, FCM Fixation buffer, FCM Permeabilization buffer and FCM Wash buffer.

Material Safety Data Sheet

FCM Lysing Solution (1X): sc-45063

DESCRIPTION

FCM Lysing Solution (1X) can be used to lyse red blood cells following antibody labeling of hematopoietic cells. FCM Lysing Solution (1X) maintains leukocyte viability, and enhances light scatter separation of lymphocyte and red blood cell debris when analyzed by flow cytometry.

Product size: 100 tests in 150 ml.

APPLICATION NOTES

Intracellular Staining

1. Prepare cells by stimulating with appropriate activation agent, if applicable. Be sure to have an unstimulated control.

2. Harvest cells into 50 ml conical tubes. Spin down cells for 5 minutes at 2000 rpm and remove media.

3. Resuspend each tube of cells in 20 ml of room temperature 1x PBS. Perform cell count.

4. Spin down cells for 5 minutes at 2000 rpm and remove PBS. Wash once in 50 ml of 4° C 1x PBS. Centrifuge for 5 minutes at 2000 rpm and remove PBS.

5. Add 1 ml of 4°C FCM fixation buffer (sc-3622) for every 1x10e6 cells and incubate on ice for 15–30 minutes.

6. Wash cells twice in 50 ml of 4° C 1x PBS, then centrifuge and remove second wash.

Add 1 ml of -20° C FCM permeabilization buffer (sc-3623) for every $1x10^6$ cells dropwise while vortexing. Incubate on ice for 15 minutes.

7. Spin down cells in permeabilization buffer, wash twice with 4° C FCM wash buffer (sc-3624).

8. Centrifuge cells for 5 minutes at 2000 rpm and remove buffer. Add 1 ml of FCM wash buffer per $1x10^7$ cells, then aliquot 100 µl of cells ($1x10^6$) into separate sample tubes.

9. Stain cells intracellularly by adding 20 µl of the fluorochrome-conjugated antibody or isotype control to the appropriate tube and incubate for 1 hour at room temperature in the dark.

NOTE: Titration of the fluorochrome-conjugated antibody should be performed for optimal results.

10. Wash cells twice with 1 ml of FCM wash buffer (sc-3624) then resuspend cells in 500 µl of fresh FCM wash buffer. Perform flow cytometric analysis within 24 hours.

WARNING

FCM Lysing Solution (1X) contains ammonium chloride; NH_4Cl (CAS#12125-02-9, EC#2351864). Ammonium chloride is toxic; If inhaled, remove to fresh air. In case of skin contact, flush with water and remove contaminated articles. In case of eye contact, flush with water. In case of swallowing, induce vomiting and wash out mouth with water. Always wear full length clothing, safety gloves, and safety glasses in a well-ventilated area.

STORAGE

Store at 4° C.

FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Santa Cruz Biotechnology shall not be held liable for any damage resulting from handling or from contact with the product.

Material Safety Data Sheet

FCM Fixation Buffer (10X): sc-45063

DESCRIPTION

The FCM Fixation buffer (10X) can be used to preserve hematopoietic cells prior to antibody-based intracellular protein labeling for flow cytometry.

Product size: 100 tests in 10 ml.

WARNING

FCM Fixation buffer (10X) contains formaldehyde (CAS#30525-89-4). Formaldehyde is a suspected carcinogen and is toxic.

HAZARDS IDENTIFICATION

May cause allergic respiratory and skin reactions. material is reactive with the mucous membranes and upper respiratory tract, eyes and skin. May be harmful if swallowed, inhaled or absorbed through the skin. may lead to death as a result of spasm, inflammation and edema of the larynx and brochi, chemical pneumonitis and pulmonary edema. Symptoms of over-exposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea or vomiting.

FIRST AID MEASURES

Following inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

In case of swallowing: Wash out mouth with water. Seek immediate medical attention.

After contact with skin: Immediately remove contaminated clothing and shoes and wash exposed area with large quantities of water. Flush with lukewarm water for at least 15 minutes. Seek immediate medical attention if required.

After contact with the eyes: Immediately flush eyes with water for at least 15-20 minutes, holding eyelids apart. Seek immediate medical attention if required.

In all cases, contact a physician. Always wear full length clothing, safety gloves, and safety glasses and work in a well-ventilated area.

FIRE FIGHTING MEASURES

Flash point: 185° F

Boiling point: 101° C

Extinguishing media: $C0_2$, dry chemical powder, alcohol or polymer foam

Hazardous decomposition products: Toxic fumes of carbon monoxide or carbon dioxide.

Special firefighting procedures: Wear OSHA/MSHA approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire & explosive hazards: This material, like most materials in powder form, is capable of creating a dust explosion. Under fire conditions, material may decompose and form flammable and/or explosive mixtures in the air. Emits toxic fumes under fire conditions.

APPLICATION NOTES

Intracellular Staining

1. Prepare cells by stimulating with appropriate activation agent, if applicable. Be sure to have an unstimulated control.

2. Harvest cells into 50 ml conical tubes. Spin down cells for 5 minutes at 2000 rpm and remove media.

3. Resuspend each tube of cells in 20 ml of room temperature 1x PBS. Perform cell count.

4. Spin down cells for 5 minutes at 2000 rpm and remove PBS. Wash once in 50 ml of 4° C 1x PBS. Centrifuge for 5 minutes at 2000 rpm and remove PBS.

5. Add 1 ml of 4°C FCM fixation buffer (sc-3622) for every 1x10e6 cells and incubate on ice for 15–30 minutes.

6. Wash cells twice in 50 ml of 4° C 1x PBS, then centrifuge and remove second wash.

Add 1 ml of -20° C FCM permeabilization buffer (sc-3623) for every $1x10^6$ cells dropwise while vortexing. Incubate on ice for 15 minutes.

7. Spin down cells in permeabilization buffer, wash twice with 4° C FCM wash buffer (sc-3624).

8. Centrifuge cells for 5 minutes at 2000 rpm and remove buffer. Add 1 ml of FCM wash buffer per $1x10^7$ cells, then aliquot 100 µl of cells ($1x10^6$) into separate sample tubes.

9. Stain cells intracellularly by adding 20 µl of the fluorochrome-conjugated antibody or isotype control to the appropriate tube and incubate for 1 hour at room temperature in the dark.

NOTE: Titration of the fluorochrome-conjugated antibody should be performed for optimal results.

10. Wash cells twice with 1 ml of FCM wash buffer (sc-3624) then resuspend cells in 500 µl of fresh FCM wash buffer. Perform flow cytometric analysis within 24 hours.

STORAGE

Store at 4° C.

FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Santa Cruz Biotechnology shall not be held liable for any damage resulting from handling or from contact with the product.

OTHER INFORMATION

Recommended usage and restriction: Only for trained staff.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Santa Cruz Biotechnology, Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

U.S. 1.800.457.3801 • 831.457.3800 • fax 831.457.3801 • Europe +800 4573 8000 • 49 (0)6221 4503 0 • fax 49 (0)6221 4503 45 • www.scbt.com

Material Safety Data Sheet

FCM Permeabilization buffer (1X): sc-45063

DESCRIPTION

The FCM permeabilization buffer (1X) can be used to permeabilize cells prior to antibody-based intracellular protein labeling for flow cytometry.

Product size: 100 tests in 100 ml.

APPLICATION NOTES

Intracellular Staining

1. Prepare cells by stimulating with appropriate activation agent, if applicable. Be sure to have an unstimulated control.

2. Harvest cells into 50 ml conical tubes. Spin down cells for 5 minutes at 2000 rpm and remove media.

3. Resuspend each tube of cells in 20 ml of room temperature 1x PBS. Perform cell count.

4. Spin down cells for 5 minutes at 2000 rpm and remove PBS. Wash once in 50 ml of 4° C 1x PBS. Centrifuge for 5 minutes at 2000 rpm and remove PBS.

5. Add 1 ml of 4°C FCM fixation buffer (sc-3622) for every 1x10e6 cells and incubate on ice for 15–30 minutes.

6. Wash cells twice in 50 ml of 4° C 1x PBS, then centrifuge and remove second wash.

Add 1 ml of -20° C FCM permeabilization buffer (sc-3623) for every $1x10^6$ cells dropwise while vortexing. Incubate on ice for 15 minutes.

7. Spin down cells in permeabilization buffer, wash twice with 4° C FCM wash buffer (sc-3624).

8. Centrifuge cells for 5 minutes at 2000 rpm and remove buffer. Add 1 ml of FCM wash buffer per $1x10^7$ cells, then aliquot 100 µl of cells ($1x10^6$) into separate sample tubes.

9. Stain cells intracellularly by adding 20 µl of the fluorochrome-conjugated antibody or isotype control to the appropriate tube and incubate for 1 hour at room temperature in the dark.

NOTE: Titration of the fluorochrome-conjugated antibody should be performed for optimal results.

10. Wash cells twice with 1 ml of FCM wash buffer (sc-3624) then resuspend cells in 500 µl of fresh FCM wash buffer. Perform flow cytometric analysis within 24 hours.

WARNING

FCM Permeabilization buffer (1X) contains methanol; CH_3OH (CAS#67-56-1, UN#1230, ERG #131). Methanol is toxic and flammable; If inhaled, remove to fresh air. In case of skin contact, flush with water and remove contaminated articles. In case of eye contact, flush with water. In case of swallowing, induce vomiting and wash out mouth with water. Always wear full length clothing, safety gloves, and safety glasses in a well-ventilated area. Avoid overheating, sparks, and flames.

STORAGE

Store at -20° C.

FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC OR THERAPEUTIC USE.

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Material Safety Data Sheet

FCM Wash buffer (1X): sc-45063

DESCRIPTION

The FCM Wash buffer (1X) can be used as a cell wash buffer for flow cytometry.

Product size: 100 tests in 125 ml.

APPLICATION NOTES

Intracellular Staining

1. Prepare cells by stimulating with appropriate activation agent, if applicable. Be sure to have an unstimulated control.

2. Harvest cells into 50 ml conical tubes. Spin down cells for 5 minutes at 2000 rpm and remove media.

3. Resuspend each tube of cells in 20 ml of room temperature 1x PBS. Perform cell count.

4. Spin down cells for 5 minutes at 2000 rpm and remove PBS. Wash once in 50 ml of 4° C 1x PBS. Centrifuge for 5 minutes at 2000 rpm and remove PBS.

5. Add 1 ml of 4°C FCM fixation buffer (sc-3622) for every 1x10e6 cells and incubate on ice for 15–30 minutes.

6. Wash cells twice in 50 ml of 4° C 1x PBS, then centrifuge and remove second wash.

Add 1 ml of -20° C FCM permeabilization buffer (sc-3623) for every $1x10^6$ cells dropwise while vortexing. Incubate on ice for 15 minutes.

7. Spin down cells in permeabilization buffer, wash twice with 4° C FCM wash buffer (sc-3624).

8. Centrifuge cells for 5 minutes at 2000 rpm and remove buffer. Add 1 ml of FCM wash buffer per $1x10^7$ cells, then aliquot 100 µl of cells ($1x10^6$) into separate sample tubes.

9. Stain cells intracellularly by adding 20 µl of the fluorochrome-conjugated antibody or isotype control to the appropriate tube and incubate for 1 hour at room temperature in the dark.

NOTE: Titration of the fluorochrome-conjugated antibody should be performed for optimal results.

10. Wash cells twice with 1 ml of FCM wash buffer (sc-3624) then resuspend cells in 500 µl of fresh FCM wash buffer. Perform flow cytometric analysis within 24 hours.

WARNING

FCM Wash buffer (1X) contains 0.2% sodium azide which is known to be toxic. Avoid contact with skin, eyes, and mucous membranes.

STORAGE

Store at 4° C.

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SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.
Revision date 30-Jan-2020
Version 2.2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	FCM Lysing solution (1x)
Product Code	SC-3621

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122).

Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Signal word	Not classified
Hazard statements	Not classified
Symbols/Pictograms	Not classified
Precautionary Statements - Prevention	Wash hands thoroughly after handling
Precautionary Statements - Response	IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)	Not applicable

Other Information

NFPA		HMIS	
Health hazards	0	Health hazards	0
Flammability	0	Flammability	0
Stability	0	Physical hazards	0
Physical and chemical properties	-	Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight	No information available
Formula	No information available

Chemical name	CAS No.	Weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	>98	> 90 mL/kg (Rat)	-	-
Ammonium Chloride	12125-02-9	1 - 5	= 1650 mg/kg (Rat)	-	-

4. FIRST AID MEASURES

First Aid Measures

General advice	Consult a physician if necessary. Remove to fresh air.
Eye contact	Wash with plenty of water.
Skin Contact	Wash skin with soap and water.
Inhalation	Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration
Ingestion	Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	No information available.
Hazardous combustion products	No information available.

Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling: Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 4 °C.
Incompatible materials: None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines: .
Other Information: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ammonium Chloride 12125-02-9	STEL: 20 mg/m^3 fume TWA: 10 mg/m^3 fume	(vacated) TWA: 10 mg/m^3 fume (vacated) STEL: 20 mg/m^3 fume	TWA: 10 mg/m^3 fume STEL: 20 mg/m^3 fume

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls: Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection: Wear safety glasses with side shields (or goggles).
Skin and Body Protection: Wear protective gloves and protective clothing.
Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid
Appearance: No information available
Odor: No information available

Property	Values
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Liquid Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available

Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	No information available.
Target Organ Effects	Eyes, Respiratory system, Skin.

Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Ammonium Chloride 12125-02-9	-	725: 24 h Lepomis macrochirus mg/L LC50 209: 96 h Cyprinus carpio mg/L LC50 static	-	202: 24 h Daphnia magna mg/L LC50

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT Not regulated

IMDG Not regulated

IATA Not regulated

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) Philippines (PICCS)

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	-	X	-	-	X	X	X	X
Ammonium Chloride	X	X	-	X	-	X	X	X	X	X

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium Chloride 12125-02-9	5000 lb			X

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania

Ammonium Chloride 12125-02-9	X	X	X

16. OTHER INFORMATION

Revision note No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.
Revision date 30-Jan-2020
Version 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	FCM Fixation buffer (10X)
Product Code	SC-3622

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Gases)	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A

Label elements

Signal word: Danger

Hazard statements:
Toxic if inhaled
Causes severe skin burns and eye damage
Suspected of causing genetic defects
May cause cancer

Symbols/Pictograms

Precautionary Statements - Prevention:
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response	Immediately call a POISON CENTER or doctor/physician IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician Call a POISON CENTER or doctor/physician if you feel unwell Wash contaminated clothing before reuse IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell Immediately call a POISON CENTER or doctor/physician IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth Do NOT induce vomiting
Precautionary Statements - Storage	Store locked up Store in a well-ventilated place. Keep container tightly closed
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)	Not applicable

Other Information

Other hazards	Harmful to aquatic life with long lasting effects. Toxic to aquatic life.
Unknown acute toxicity	10.10000191% of the mixture consists of ingredient(s) of unknown toxicity.

NFPA		**HMIS**	
Health hazards	2	Health hazards	2
Flammability	3	Flammability	3
Stability	0	Physical hazards	0
Physical and chemical properties	-	Personal protection	-
		* = Chronic Health Hazard	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight	No information available
Formula	No information available

Chemical name	CAS No.	Weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	40 - 70	> 90 mL/kg (Rat)	-	-
Formaldehyde	50-00-0	10 - 30	= 100 mg/kg (Rat)	= 270 mg/kg (Rabbit)	= 0.578 mg/L (Rat) 4 h
PBS (1X)	-	7 - 13	-	-	-

4. FIRST AID MEASURES

First Aid Measures

General advice	Immediate medical attention is required. If symptoms persist, call a physician.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. Wash contaminated clothing

	before reuse. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water.
Inhalation	Remove to fresh air Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation Immediate medical attention is required If not breathing, give artificial respiration Artificial respiration and/or oxygen may be necessary Call a physician Move to fresh air in case of accidental inhalation of vapors If symptoms persist, call a physician
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Call a physician.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Hazardous combustion products	No information available.

Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling: Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Store at 4 °C.

Incompatible materials: None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines: .

Other Information: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde 50-00-0	STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls: Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection: Tight sealing safety goggles. Face protection shield.

Skin and Body Protection: Wear protective gloves and protective clothing.

Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations: When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Appearance: No information available

Odor: No information available

Property	Values
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Liquid Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Target Organ Effects	Eyes, Respiratory system, Skin.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Formaldehyde 50-00-0	A1	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists) A2 - Suspected Human Carcinogen
A1 - Known Human Carcinogen
IARC (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program) Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present

Numerical measures of toxicity - Product Information

Unknown acute toxicity 10.10000191% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	445 mg/kg
ATEmix (dermal)	1202 mg/kg
ATEmix (inhalation-gas)	2095 mg/l
ATEmix (inhalation-dust/mist)	2.2 mg/l
ATEmix (inhalation-vapor)	2.6 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity Harmful to aquatic life with long lasting effects

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Formaldehyde 50-00-0	-	41: 96 h Brachydanio rerio mg/L LC50 static 0.032 - 0.226: 96 h Oncorhynchus mykiss mL/L LC50 flow-through 100 - 136: 96 h Oncorhynchus mykiss mg/L LC50 static 23.2 - 29.7: 96 h Pimephales promelas mg/L LC50 static 1510: 96 h Lepomis macrochirus µg/L LC50 static 22.6 - 25.7: 96 h Pimephales promelas mg/L LC50 flow-through	-	2: 48 h Daphnia magna mg/L LC50 11.3 - 18: 48 h Daphnia magna mg/L EC50 Static

10.1% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

Chemical name	Partition coefficient
Formaldehyde 50-00-0	0.35

13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging Do not reuse container.
Other Information Waste codes should be assigned by the user based on the application for which the product was used.
US EPA Waste Number U122
California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Formaldehyde 50-00-0	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN3334
Hazard Class	9
Proper shipping name	Aviation regulated liquid, n.o.s.
Reportable Quantity (RQ)	(Formaldehyde: RQ (kg)= 45.40)
Description	UN3334, Aviation regulated liquid, n.o.s., 9
Emergency Response Guide Number	171

IMDG

UN/ID no	UN3334
Hazard Class	9
Proper shipping name	Aviation regulated liquid, n.o.s.
Description	UN3334, Aviation regulated liquid, n.o.s., 9
Special Provisions	960

IATA

UN/ID no	UN3334
Hazard Class	9
Packing Group	III
Proper shipping name	Aviation regulated liquid, n.o.s.
Description	UN3334, Aviation regulated liquid, n.o.s. (Formaldehyde), 9, III
ERG Code	9A

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists
No information available

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	-	X	-	-	X	X	X	X
Formaldehyde	X	X	-	X	-	X	X	X	X	X

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Formaldehyde 50-00-0	100 lb			X

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Formaldehyde - 50-00-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Formaldehyde 50-00-0	X	X	X

16. OTHER INFORMATION

Revision note No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.
Revision date 30-Jan-2020
Version 3.7

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	FCM Permeabilization buffer (1X)
Product Code	SC-3623

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Specific target organ toxicity (single exposure)	Category 1
Flammable liquids	Category 2

Label elements

Signal word: Danger

Hazard statements:
Causes damage to organs
Highly flammable liquid and vapor

Symbols/Pictograms

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response	IF exposed: Call a POISON CENTER or doctor/physician Call a POISON CENTER or doctor/physician if you feel unwell Wash contaminated clothing before reuse IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician Rinse mouth In case of fire: Use CO2, dry chemical, or foam for extinction
Precautionary Statements - Storage	Store locked up Store in a well-ventilated place. Keep container tightly closed
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)	Not applicable

Other Information

Other hazards	Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

NFPA		**HMIS**	
Health hazards	2	Health hazards	2
Flammability	3	Flammability	3
Stability	0	Physical hazards	0
Physical and chemical properties	-	Personal protection	-
		* = Chronic Health Hazard	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight	No information available
Formula	No information available

Chemical name	CAS No.	Weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Methanol	67-56-1	70 - 90	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit) = 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Water	7732-18-5	7 - 13	> 90 mL/kg (Rat)	-	-

4. FIRST AID MEASURES

First Aid Measures

General advice	Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.
Skin Contact	Wash off immediately with plenty of water.
Inhalation	Immediate medical attention is required Remove to fresh air If not breathing, give artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water.
Self-protection of the first aider	Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon oxides.

Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Store at room temperature.
Incompatible materials	None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m^3 (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m^3 (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m^3 (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m^3 STEL: 250 ppm STEL: 325 mg/m^3

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State liquid
Appearance No information available
Odor Odorless

Property	Values
pH	No information available
Melting point/freezing point	No information available
Boiling point	64 °C
Flash point	11 °C
Liquid Density	No information available
Evaporation rate	No information available
Upper flammability limits	44.0%
Lower flammability limit	5.5%
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	No information available.
Target Organ Effects	Gastrointestinal tract (GI), Central nervous system, Eyes, Respiratory system, Skin.

Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	111 mg/kg
ATEmix (dermal)	333 mg/kg
ATEmix (inhalation-dust/mist)	0.6 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity — Harmful to aquatic life with long lasting effects

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Methanol 67-56-1	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-	-

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.

Mobility No information available.

Chemical name	Partition coefficient
Methanol 67-56-1	-0.77

13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging Do not reuse container.
Other Information Waste codes should be assigned by the user based on the application for which the product was used.
US EPA Waste Number U154
California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Methanol 67-56-1	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT
UN/ID no UN1230
Hazard Class 3
Subsidiary class 6.1
Packing Group II
Proper shipping name Methanol solution
Reportable Quantity (RQ) (Methanol: RQ (kg)= 2270.00)
Description UN1230, Methanol solution, 3 (6.1), II
Emergency Response Guide Number 131

IMDG
UN/ID no UN1230
Hazard Class 3
Subsidiary hazard class 6.1
Packing Group II
Proper shipping name Methanol solution
Description UN1230, Methanol solution, 3 (6.1), II, (11°C c.c.)
Special Provisions 279
EmS-No F-E, S-D

IATA
UN/ID no UN1230
Hazard Class 3
Subsidiary hazard class 6.1
Packing Group II
Proper shipping name Methanol solution
Description UN1230, Methanol solution, 3 (6.1), II
ERG Code 3L

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) Philippines (PICCS)

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Methanol	X	X	-	X	-	X	X	X	X	X
Water	X	X	-	X	-	-	X	X	X	X

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Methanol - 67-56-1	Developmental

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Methanol 67-56-1	X	X	X

16. OTHER INFORMATION

Revision note	No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	FCM Wash buffer (1X)
Product Code	SC-3624

Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number

Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122).

Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Signal word	Not classified
Hazard statements	Not classified
Symbols/Pictograms	Not classified
Precautionary Statements - Prevention	Wash hands thoroughly after handling
Precautionary Statements - Response	IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)	Not applicable

Other Information

Unknown acute toxicity	1.00000377% of the mixture consists of ingredient(s) of unknown toxicity.

NFPA		HMIS	
Health hazards	-	Health hazards	-
Flammability	-	Flammability	-
Stability	-	Physical hazards	-
Physical and chemical properties	-	Personal protection	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight	No information available
Formula	No information available

Chemical name	CAS No.	Weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	>95	> 90 mL/kg (Rat)	-	-
Blocking Reagent	-	1 - 5	-	-	-
Sodium Chloride	7647-14-5	<1	= 3 g/kg (Rat)	> 10 g/kg (Rabbit)	> 42 g/m³ (Rat) 1 h
Sodium phosphate dibasic heptahydrate	7782-85-6	<1	= 12930 mg/kg (Rat)	-	-
Potassium Phosphate, Monobasic	7778-77-0	<0.1	= 3200 mg/kg (Rat)	> 4640 mg/kg (Rabbit)	-
Sodium azide	26628-22-8	<0.1	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	-
Potassium Chloride	7447-40-7	<0.1	= 2600 mg/kg (Rat)	-	-

4. FIRST AID MEASURES

First Aid Measures

General advice — Consult a physician if necessary. Remove to fresh air.
Eye contact — Wash with plenty of water.
Skin Contact — Wash skin with soap and water.
Inhalation — Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration
Ingestion — Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects, both acute and delayed

Symptoms — No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians — Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media — Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media — No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical — No information available.
Hazardous combustion products — No information available.

Explosion data

Sensitivity to Mechanical Impact — No information available.
Sensitivity to Static Discharge — No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters — As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions — Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 4 °C.
Incompatible materials	None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	.
Other Information	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium azide 26628-22-8	Ceiling: 0.29 mg/m³ Sodium azide Ceiling: 0.11 ppm Hydrazoic acid vapor	(vacated) S* (vacated) Ceiling: 0.1 ppm HN3 (vacated) Ceiling: 0.3 mg/m³ NaN3	Ceiling: 0.1 ppm HN3 Ceiling: 0.3 mg/m³ NaN3

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and Body Protection	Wear protective gloves and protective clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	liquid
Appearance	No information available
Odor	No information available

Property	**Values**
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available

Liquid Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 1.00000377% of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Sodium Chloride 7647-14-5	-	12946: 96 h Lepomis macrochirus mg/L LC50 static 6020 - 7070: 96 h Pimephales promelas mg/L LC50 static 7050: 96 h Pimephales promelas mg/L	-	340.7 - 469.2: 48 h Daphnia magna mg/L EC50 Static 1000: 48 h Daphnia magna mg/L EC50

		LC50 semi-static 6420 - 6700: 96 h Pimephales promelas mg/L LC50 static 4747 - 7824: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 5560 - 6080: 96 h Lepomis macrochirus mg/L LC50 flow-through		
Sodium azide 26628-22-8	-	5.46: 96 h Pimephales promelas mg/L LC50 flow-through 0.8: 96 h Oncorhynchus mykiss mg/L LC50 0.7: 96 h Lepomis macrochirus mg/L LC50	-	-
Potassium Chloride 7447-40-7	2500: 72 h Desmodesmus subspicatus mg/L EC50	750 - 1020: 96 h Pimephales promelas mg/L LC50 static 1060: 96 h Lepomis macrochirus mg/L LC50 static	-	825: 48 h Daphnia magna mg/L EC50 83: 48 h Daphnia magna mg/L EC50 Static

1.292% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	P105
California Hazardous Waste Status	This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Sodium azide 26628-22-8	Ignitable Reactive

14. TRANSPORT INFORMATION

DOT Not regulated

IMDG Not regulated

IATA Not regulated

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists

No information available

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	-	X	-	-	X	X	X	X
Sodium Chloride	X	X	-	X	-	X	X	X	X	X
Sodium phosphate dibasic	-	-	-	-	-	-	X	-	X	X

heptahydrate										
Potassium Phosphate, Monobasic	X	X	-	X	-	X	X	X	X	X
Sodium azide	X	X	-	X	-	X	X	X	X	X
Potassium Chloride	X	X	-	X	-	X	X	X	X	X

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

16. OTHER INFORMATION

Revision note	No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet