RIPA Lysis Buffer System: sc-24948

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RIPA Lysis Buffer System
Product Number: sc-24948

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877–715–9305
Outside the US & Canada: +800 2436 2255 (1–800-CHEMCALL) or call +613 9573 3112

Description: For use in mammalian cell lysis.

Formulation: Four (4) vials:

VIAL 1: 1x Lysis Buffer: 1x TBS, 1% Nonidet P-40, 0.5% sodium deoxycholate, 0.1% SDS, 0.004% sodium azide.
VIAL 2: PMSF in DMSO.
VIAL 3: Protease inhibitor cocktail in DMSO.
VIAL 4: Sodium orthovanadate in water.

Usage: Combine 10 µl PMSF solution, 10 µl sodium orthovanadate solution and 10–20 µl protease inhibitor cocktail solution per ml of 1x RIPA Lysis buffer to prepare complete RIPA.

Use 3 ml complete RIPA per gram of tissue

or

1 ml complete RIPA per 2.0 x 10^7 cells in suspension

or

0.6 ml complete RIPA per subconfluent monolayer on a 100 mm plate.

Transport: UN 2928
Class 6.1/8
Packing Group II

Storage: Store according to label instructions for each vial.

RIPA Lysis Buffer System: sc-24948
VIAL 1: 1 x Lysis Buffer

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

MATERIAL SAFETY DATA SHEET

Section 1 – Chemical Product and Company Identification

Product Name: RIPA Lysis Buffer System
VIAL 1: 1x Lysis Buffer

Catalog Number: N/A (VIAL 1 of sc-24948)

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

Section 2 – Composition/Information on Ingredient

SUBSTANCE

CAS #		*SARA 313*
RIPA BUFFER		
None		No

INGREDIENTS

CAS #	*Percent*	*SARA 313*
WATER		
7732–18–5	96	No
GLYCOLS, POLYETHYLENE, MONO((1,1,3,3-TETRAMETHYLBUTYL)PHENYL) ETHER		
9036–19–5	1	Yes
SODIUM CHLORIDE		
7647–14–5	< 1	No
TRIS-HCL 1M STOCK SOLUTION pH 8.0		
None	< 1	No
DEOXYCHOLIC ACID SODIUM MONOHYDRATE		
145224–92–6	≤0.5	No
SODIUM DODECYL SULFATE SOLUTION CA. 20%		
None	≤0.5	No

Section 3 – Hazards Identification

HMIS RATING

HEALTH: 0
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 0
FLAMMABILITY: 0
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 – First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 – Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 – Accidental Release Measures

METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 – Handling and Storage

HANDLING

User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Store at 4° C.

Section 8 – Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges.

Hand: Protective gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

Section 9 – Physical/Chemical Properties

Physical State	Liquid	pH	N/A
BP/BP Range	N/A	MP/MP Range	N/A
Freezing Point	N/A	Vapor Pressure	N/A
Vapor Density	N/A	Saturated Vapor Conc.	N/A
Bulk Density	N/A	Odor Threshold	N/A
Volatile%	N/A	VOC Content	N/A
Water Content	N/A	Solvent Content	N/A
Evaporation Rate	N/A	Viscosity	N/A
Surface Tension	N/A	Partition Coefficient	N/A
Decomposition Temp.	N/A	Flash Point	N/A
Explosion Limits	N/A	Flammability	N/A
Autoignition Temp	N/A	Refractive Index	N/A
Optical Rotation	N/A	Miscellaneous Data	N/A
Solubility	N/A	N/A = not available	

Section 10 – Stability and Reactivity

STABILITY

Stable: Stable.
Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 – Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12 – Ecological Information

No data available.

Section 13 – Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 – Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 – Regulatory Information

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 – Other Information

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user. 7/23/2012

RIPA Lysis Buffer System: sc-24948
VIAL 2: PMSF in DMSO

The Power to Question

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RIPA Lysis Buffer System
VIAL 2: PMSF in DMSO
Catalog Number: N/A (VIAL 2 of sc-24948)
Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800
Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Target Organ Effect, Toxic by ingestion, Corrosive
Target Organs
Nerves, Heart, Blood, Eyes
GHS Classification
Acute toxicity, Oral (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
GHS Label elements, including precautionary statements
Pictogram

Signal word: Danger

Hazard statement(s)

H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.

Precautionary statement(s)

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	1

NFPA Rating

Health hazard:	3
Fire:	0
Reactivity Hazard:	1

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Phenylmethylsulfonyl fluoride; !-Toluenesulfonyl fluoride; PMSF; Benzylsulfonyl fluoride;
Formula: C7H7FO2S
Molecular Weight: 174.19

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
Dimethyl sulfoxide			
67–68–5	200–664–3	–	< 100%
α-Toluenesulphonyl fluoride			
329–98–6	206–350–2	–	–

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products
Formed under fire conditions – Carbon oxides, Sulphur oxides, Hydrogen fluoride
Further information
Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/ or explosive hydrogen gas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed. Store cool and dark. Store according to vial label instructions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	solid in DMSO	pH	no data available
Melting/freezing point	92° C	Boiling point	no data available
Flash point	no data available	Ignition temperature	no data available
Autoignition temperature	no data available	Lower explosion limit	no data available
Upper explosion limit	no data available	Vapor pressure	no data available
Density	no data available	Water solubility	no data available
Relative vapor density	no data available	Odor	no data available
Odor Threshold	no data available	Evaporation rate	no data available
Partition coefficient n-octanol/water	no data available		

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

Materials to avoid

Strong oxidizing agents, Strong bases, acids

Hazardous decomposition products

Formed under fire conditions – Carbon oxides, Sulphur oxides, Hydrogen fluoride

Other decomposition products – no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50: LD50 Oral – mouse – 200 mg/kg
Inhalation LC50: no data available
Dermal LD50: no data available

Other information on acute toxicity
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available
Teratogenicity
no data available
Specific target organ toxicity – single exposure (Globally Harmonized System)
no data available
Specific target organ toxicity – repeated exposure (Globally Harmonized System)
no data available
Aspiration hazard
no data available
Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion Toxic if swallowed.
Skin May be harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Synergistic effects
no data available
Additional Information
RTECS: XT8040000

12. ECOLOGICAL INFORMATION

Toxicity
no data available
Bioaccumulative potential
no data available
PBT and vPvB assessment
no data available
Persistence and degradability
no data available
Mobility in soil
no data available
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2928 Class: 6.1 (8) Packing group: II

Proper shipping name: Toxic solids, corrosive, organic, n.o.s. (α-Toluenesulphonyl fluoride)

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN number: 2928 Class: 6.1 (8) Packing group: II EMS-No: F-A, S-B

Proper shipping name: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (α-Toluenesulphonyl fluoride)

Marine pollutant: No

IATA

UN number: 2928 Class: 6.1 (8) Packing group: II

Proper shipping name: Toxic solid, corrosive, organic, n.o.s. (α-Toluenesulphonyl fluoride)

15. REGULATORY INFORMATION

OSHA Hazards

Target Organ Effect, Toxic by ingestion, Corrosive

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No Components Listed

Pennsylvania Right To Know Components

α-Toluenesulphonyl fluoride CAS-No.: 329–98–6

New Jersey Right To Know Components

α-Toluenesulphonyl fluoride CAS-No.: 329–98–6

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user. 7/23/2012

RIPA Lysis Buffer System: sc-24948
VIAL 3: protease inhibitor cocktail in DMSO

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RIPA Lysis Buffer System
VIAL 3: Protease inhibitor cocktail in DMSO

Product Number: N/A *(VIAL 3 OF SC-24948)*

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Combustible Liquid, Target Organ Effect, Irritant

Target Organs

Eyes, Skin

Other hazards which do not result in classification

Rapidly absorbed through skin.

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H227	Combustible liquid
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary statement(s)

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	2
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	2
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

Aggravated Medical Condition
Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
Dimethyl sulfoxide			
67–68–5	200–664–3	–	< 100%
4-(2-Aminoethyl) benzenesulfonylfluoride hydrochloride			
30827–99–7	–	–	–
Trypsin inhibitor, pancreatic basic			
9087–70–1	232–994–9	–	–
Bestatin hydrochloride			
65391–42–6	–	–	–
N-(trans-Epoxysuccinyl)-L-leucine 4- guanidinobutylamide			
66701–25–5	–	–	–
Acetyl-leucine-leucine-arginal, hemisulfate			
103476–89–7	–	–	–
Pepstatin A			
26305–03–3	247–600–0	–	–

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.
Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the build up of electrostatic charge.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Store at -20° C, under inert gas. Hygroscopic.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	*CAS-No.*	*Value*	*Control Parameters*	*Update*	*Basis*
Dimethyl sulfoxide	67-68-5	TWA	250 ppm	2008-01-01	USA. Workplace Environmental Exposure Levels (WEEL)

Personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin and body protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	liquid	pH	no data available
Melting point	no data available	Boiling point	no data available
Flash point	87º C - closed cup	Ignition temperature	no data available
Lower explosion limit	no data available	Upper explosion limit	no data available
Water solubility	no data available		

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.
Conditions to avoid
Exposure to moisture may affect product quality.
Heat, flames and sparks.
Materials to avoid
Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions – Carbon oxides, Sulphur oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
Eyes: no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available
Specific target organ toxicity – single exposure (Globally Harmonized System)
no data available
Specific target organ toxicity – repeated exposure (Globally Harmonized System)
no data available
Aspiration hazard
no data available
Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Aggravated Medical Condition
Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body.

12. ECOLOGICAL INFORMATION

Toxicity
no data available
Bioaccumulative potential
no data available
PBT and vPvB assessment
no data available
Persistence and degradability
no data available
Mobility in soil
no data available
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

NA-Number: 1993 Class: CBL Packing group: III

Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards

Combustible Liquid, Target Organ Effect, Irritant

DSL Status

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

Acetyl-leucine-leucine-arginal, hemisulfate	CAS-No.: 103476–89–7
Pepstatin A	CAS-No.: 26305–03–3
4-(2-Aminoethyl) benzenesulfonylfluoride hydrochloride	CAS-No.: 30827–99–7
Bestatin hydrochloride	CAS-No.: 65391–42–6
N-(trans-Epoxysuccinyl)-L-leucine 4- guanidinobutylamide	CAS-No.: 66701–25–5
Trypsin inhibitor, pancreatic basic	CAS-No.: 9087–70–1

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Dimethyl sulfoxide	CAS-No.: 67–68–5

New Jersey Right To Know Components

Dimethyl sulfoxide	CAS-No.: 67–68–5

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

7/23/2012

RIPA Lysis Buffer System: sc-24948
VIAL 4: sodium orthovanadate in water

MATERIAL SAFETY DATA SHEET

The Power to Question

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RIPA Lysis Buffer System
Product Number: VIAL 4: Sodium orthovanadate in water

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Toxic by ingestion

GHS Classification

Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Acute toxicity, Oral (Category 4)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H302 + H312	Harmful if swallowed or in contact with skin.
H332	Harmful if inhaled.
H402	Harmful to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P322	Specific measures (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Trisodium tetraoxovanadate; sodium orthovanadate;
Formula: Na3O4V
Molecular Weight: 183.91

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
Water			
7732–18–5	–	–	< 100%
Trisodium tetraoxovanadate			
13721–39–6	237–287–9	–	–

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Flush eyes with water as a precaution.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products
Hazardous decomposition products formed under fire conditions. – Sodium/sodium oxides
Further information
The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
Conditions for safe storage
Keep container tightly closed in a well-ventilated place. Store cool and dark.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.
Personal protective equipment
Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	solid in water	pH	no data available
Melting point	850 - 866° C - lit	Boiling point	no data available
Flash point	no data available	Ignition temperature	no data available
Autoignition temperature	no data available	Lower explosion limit	no data available
Upper explosion limit	no data available	Vapor pressure	no data available
Density	no data available	Water solubility	no data available
Relative vapor density	no data available	Odor	no data available
Odor Threshold	no data available	Evaporation rate	no data available
Partition coefficient n-octanol/water	no data available		

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
no data available
Conditions to avoid
no data available
Materials to avoid
Strong oxidizing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions – Sodium/sodium oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50: LD50 Oral – rat – 330 mg/kg
Remarks: Diarrhea
Blood: Hemorrhage.

Inhalation LC50: no data available

Dermal LD50: no data available

Other information on acute toxicity: no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity – single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity – repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion Toxic if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

no data available

Additional Information

RTECS: YW1120000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 – Oncorhynchus tshawytscha – 16.5 mg/l – 96 h

Persistence and degradability

no data available

PBT and vPvB assessment

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)	IMDG	IATA
Not dangerous goods	Not dangerous goods	Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion
DSL Status
All components of this product are on the Canadian DSL list.
SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Acute Health Hazard
Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components
Trisodium tetraoxovanadate CAS-No.: 13721–39–6

New Jersey Right To Know Components
Trisodium tetraoxovanadate CAS-No.: 13721–39–6

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

7/23/2012