BioinGentech Ltd.
Genetic Engineering

MSDS Bioingentech Total RNA Purification Kit

Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

BioinGentech Ltda.
Genetic Engineering

Kit components

Product Bioingentech®
Total RNA Purification Kit

Substance Number	Description	Symbols
A099	Beta-Mercaptoethanol	T
A100	Buffer lysis	-
A101	Sodium Citrate	-
A102	Citric acid	-
A103	RNase Free H_20	-
A104	Guanidine isothiocyanate	-
A105	N-Laurolyl Sarcosine Sodium Salt	-
A106	Saturated phenol	-
A107	Sodium acetate	-

1 Identification of substance

Trade name: Beta-Mercaptoethanol
Article number: A099
Application of the substance / the preparation Laboratory chemicals
Synonyms: 1-ETHANOL-2-THIOL; ETHYLENE GLYCOL, MONOTHIO-2-HYDROXY; ETHYL MERCAPTAN; 2-MEMERCAPTOETHANOL; BETA-MERCAPTOETHANOL; 2-MERCAPTOETHANOL; 2-THIOETHANOLTHIOGLYCOL; THIOMONOGLYCOL; USAF EK-4196
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Substance/Preparation : Substance

Ingredient Name	CAS#	%	EC Number	Symbol	R-Phrases
Beta-Mercaptoethanol	60-24-2	98-100	200-464-6	T	R20/22, R24, R36/37/38

3 Hazards identification

Emergency Overview : WARNING!
HARMFUL IF ABSORBED THROUGH SKIN.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, EYES.
MAY BE HARMFUL IF INHALED OR SWALLOWED.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.
Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of Entry : Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Potential Acute Health Effects : Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant). Severe over-exposure can result in death.
Carcinogenic Effects Data : CARCINOGENIC EFFECTS: Classified None. by NIOSH.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
Medical Conditions Aggravated by Overexposure : Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Overexposure /Signs/Symptoms : Not available.
Classification : R20/22, R24, R36/37/38
Physical/chemical hazards : Not applicable.
Human health hazards : Harmful by inhalation and if swallowed.
Toxic in contact with skin.
Irritating to eyes, respiratory system and skin.
Environmental hazards : Not applicable.

Material Safety Data Sheet

Trade name: Beta-Mercaptoethanol

4 First aid measures

Notice to Reader Get immediate medical attention.
Effects and symptoms
Inhalation: Hazardous in case of inhalation (lung irritant).
Ingestion: Not available.
Skin Contact: Hazardous in case of skin contact (irritant). Severe over-exposure can result in death. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Eye Contact: Hazardous in case of eye contact (irritant).
Aggravating conditions: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

First-Aid Measures
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15
minutes. Cold water may be used. Get medical attention.
Notes to Physician: Not available.
Protection of first-aiders: Not available.

5 Fire fighting measures

Flammability of the Product: Combustible.
Flash Points: CLOSED CUP: 73.889°C (165°F). OPEN CUP: 72.9°C (163.2°F).
Fire Hazards in Presence of Various Substances: Not available.
Fire Fighting Media and Instructions: SMALL FIRE: Use DRY chemical powder
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Protective Clothing (Fire): Be sure to use an approved/certified respirator or equivalent.
Special Remarks on Fire Hazards: Combustible material: may burn but does not ignite readily.
When heated, vapors may form explosive mixtures with air: indoors, outdoors, and sewers explosion hazards.
Some may polymerize (P) explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas.
Containers may explode when heated.
Runoff may pollute waterways.
Substance may be transported in a molten form.
Hazardous thermal (de)composition products: Not available.

6 Accidental release measures

Personal precautions: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Environmental Precautions and Clean-up Methods: Combustible material. Poisonous liquid.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.
Small Spill and Leak: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Material Safety Data Sheet

Trade name: Beta-Mercaptoethanol

7 Handling and storage

Handling: Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire, minimize ignition sources.
Storage: Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
Intended Use: Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Packaging materials
Suitable / Not suitable: Use original container.

8 Exposure controls and personal protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Exposure Limit Values

Ingredient Name	Occupational Exposure Limits
United States Beta-Mercaptoethanol	Not available.
Sweden Beta-Mercaptoethanol	Not available.
Denmark Beta-Mercaptoethanol	Not available.
Norway Beta-Mercaptoethanol	Not available.
France Beta-Mercaptoethanol	Not available.
Netherlands Beta-Mercaptoethanol	Not available.
Germany Beta-Mercaptoethanol	Not available.

Personal Protection
Eyes: Lab coat.
Body: Splash goggles.
Hands: Gloves.
Respiratory: Respirator is not needed under normal and intended conditions of use, if exposures are kept below established limits.

Material Safety Data Sheet

Trade name: Beta-Mercaptoethanol

9 Physical and chemical properties

General Information

Form **Color** **Odor**	Liquid. (mobile) Clear Colorless. Powerful nauseating stench
Molecular Weight	78.14 g/mole
Boiling/Condensation Point	157°C (314.6°F)
Melting/Freezing Point	25°C (77°F)
Specific Gravity	1.1168 (Water = 1)
Vapor Density	2.69 (Air = 1)
Dispersion Properties	See solubility in water.
Solubility	Easily soluble in cold water, hot water.
Taste	Not available

10 Stability and reactivity

Stability and Reactivity: The product is stable.
Conditions to avoid: Not available.
Materials to avoid: Reactive with oxidizing agents.
Hazardous Polymerization: Will not occur.
Hazardous Decomposition Products: Not available.

11 Toxicological information

Toxicity to Animals: Acute oral toxicity (LD50): 190 mg/kg [Mouse].
Acute dermal toxicity (LD50): 150 mg/kg [Rabbit].
Chronic Effects on Humans: **CARCINOGENIC EFFECTS**: Classified None. by NIOSH.
Causes damage to the following organs: mucous membranes, upper respiratory tract, skin, eyes.
Other Toxic Effects on Humans: Hazardous in case of eye contact (irritant), of inhalation (lung irritant).
Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: Not available.
Special Remarks on Other Toxic Effects on Humans: Not available.

12 Ecological information

Mobility: Not available
Persistence/degradability: Not available
Bioaccumulative potential: Not available
Ecotoxicity: Not available
Germany water class: VCI WGK: No products were found.

Material Safety Data Sheet

Trade name: Beta-Mercaptoethanol

13 Disposal considerations

Waste Information: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Waste Stream: Not available.

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Material Safety Data Sheet

Trade name: Beta-Mercaptoethanol

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Buffer lysis
Article number: A100
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Hazardous/Non-hazardous Components

Chemical Name	CAS#	Weight %
Thiocyanic acid, compound with guanidine (1:1)	593-84-0	40-70

3 Hazards identification

Emergency Overview
Harmful if swallowed
Irritating to eyes and skin.
Irritating to skin

Principle Routes of Exposure/
Potential Health effects
Eyes: Irritating to eyes.
Skin: Irritating to skin. Components of the product may be absorbed into the body through the skin.
Inhalation May cause irritation of respiratory tract.
Ingestion Harmful if swallowed.

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Organ Effects: No information available

HMIS

Health	1
Reactivity	0
Flammability	0

4 First aid measures

Skin contact: Wash off immediately with plenty of water
Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Ingestion: Never give anything by mouth to an unconscious person
Inhalation: Move to fresh air
Notes to physician: Treat symptomatically.

Material Safety Data Sheet

Trade name: Buffer lysis

5 Fire fighting measures

Suitable extinguishing media: Water spray. Carbon dioxide (CO2). Foam. The product is not flammable.
Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit

6 Accidental release measures

Personal precautions: Use personal protective equipment
Methods for cleaning up: Soak up with inert absorbent material.
2

7 Handling and storage

Handling: No special handling advice required
Storage: Keep in properly labelled containers

8 Exposure controls and personal protection

Occupational exposure controls
Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Thiocyanic acid, compound with guanidine (1:1)	-	-	-	-

Engineering measures Ensure adequate ventilation, especially in confined areas

Personal protective equipment
Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment
Hand protection: Protective gloves
Eye protection: Safety glasses with side-shields
Skin and body protection: Lightweight protective clothing.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls: Prevent product from entering drains.

9 Physical and chemical properties

General Information

Form:	Liquid

Important Health Safety and Environmental Information

Boiling point/range	**°C** No data available	**°F** No data available
Melting point/range	**°C** No data available	**°F** No data available
Flash point	**°C** No data available	**°F** No data available
Autoignition temperature	**°C** No data available	**°F** No data available
Oxidizing properties	No information available	
Water solubility	soluble	

10 Stability and reactivity

Stability: Stable under normal conditions.
Materials to avoid: No information available
Hazardous decomposition products: No information available
Polymerization: Hazardous polymerisation does not occur.

Material Safety Data Sheet

Trade name: Buffer lysis

11 Toxicological information

Acute toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
Thiocyanic acid, compound with guanidine (1:1)	No data available	No data available	No data available

Principle Routes of Exposure/
Potential Health effects
Eyes: Irritating to eyes.
Skin: Irritating to skin. Components of the product may be absorbed into the body through the skin.
Inhalation: May cause irritation of respiratory tract.
Ingestion: Harmful if swallowed.

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Organ Effects: No information available

12 Ecological information

Ecotoxicity effects: No information available.
Mobility: No information available.
Biodegradation: No information available.
Bioaccumulation: No information available

13 Disposal considerations

Dispose of in accordance with local regulations

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

Material Safety Data Sheet

Trade name: Buffer lysis

15 Regulations

Sara

Section 355 (extremely hazardous substances):
None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):
None of the ingredients are listed.

TSCA (Toxic Substances Control Act):
All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:
None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:
None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:
None of the ingredients are listed.

Chemicals known to cause developmental toxicity:
None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency)
None of the ingredients are listed.

IARC (International Agency for Research on Cancer)
None of the ingredients are listed.

NTP (National Toxicology Program)
None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)
None of the ingredients are listed.

MAK (German Maximum Workplace Concentration)
None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Material Safety Data Sheet

Trade name: Buffer lysis

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Sodium Citrate
Article number: A101
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Ingredient Name	CAS#	Percent
Sodium Citrate	68-04-2	90 - 100%

3 Hazards identification

Emergency Overview

CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 0 - None
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES
Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation: Inhalation of large amounts of dust may cause irritation to the respiratory tract.
Ingestion: Extremely large oral dosages may produce gastrointestinal disturbances.
Skin Contact: Possible irritation on prolonged contact with moist or sensitive areas of the skin.
Eye Contact: No adverse effects expected but dust may cause mechanical irritation.
Chronic Exposure: No information found.
Aggravation of Pre-existing Conditions: No information found.

4 First aid measures

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion: Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.
Skin Contact: Wash exposed area with soap and water. Get medical advice if irritation develops.
Eye Contact: Wash thoroughly with running water. Get medical advice if irritation develops.

5 Fire fighting measures

Fire: As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.
Explosion: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Fire Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Material Safety Data Sheet

Trade name: Sodium Citrate

6 Accidental release measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.
2

7 Handling and storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8 Exposure controls and personal protection

Airborne Exposure Limits: None established.
Ventilation System: In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.
Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection: Wear protective gloves and clean body-covering clothing.
Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9 Physical and chemical properties

General Information

Form **Odor**	White crystals. Odorless.
Solubility	72 g/100 g of water.
Density	ca. 1.7
pH	ca. 8.0
% Volatiles by volume @ 21C (70F)	0
Boiling Point	Decomposes at red heat.
Melting Point	150C (302F)
Vapor Density (Air=1)	No information found.
Vapor Pressure (mm Hg)	No information found.
Evaporation Rate (BuAc=1)	Not applicable.

10 Stability and reactivity

Stability: Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization: Will not occur.
Incompatibilities: Strong oxidizers.
Conditions to Avoid: Heat, flame, ignition sources, dusting and incompatibles.

Material Safety Data Sheet

Trade name: Sodium Citrate

11 Toxicological information

		Cancer Lists		NTP Carcinogen
Ingredient Name	**CAS#**	**Known**	**Anticipated**	**IARC Category**
Sodium Citrate	68-04-2	No	No	None

12 Ecological information

Environmental Fate: No information found.
Environmental Toxicity: No information found.

13 Disposal considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Material Safety Data Sheet

Trade name: Sodium Citrate

15 Regulations (continue)

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

Material Safety Data Sheet

Trade name: Sodium Citrate

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Citric acid
Article number: A102
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Ingredient Name	CAS#	% by Weight
Citric acid	77-92-9	100

Toxicological Data on Ingredients: Citric acid: ORAL (LD50): Acute: 5040 mg/kg [Mouse]. 3000 mg/kg [Rat].

3 Hazards identification

Potential Acute Health Effects:
Hazardous in case of eye contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant, sensitizer), of ingestion. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Severe over-exposure can produce lung damage, choking, unconsciousness or death.
Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer).
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to teeth.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

4 First aid measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation: Not available.
Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion: Not available.

Material Safety Data Sheet

Trade name: Citric acid

5 Fire fighting measures

Flammability of the Product: May be combustible at high temperature.
Auto-Ignition Temperature: 1010°C (1850°F)
Flash Points: Not available.
Flammable Limits: LOWER: 0.28 Kg/M3 (Dust) UPPER: 2.29 Kg/M3 (Dust)
Products of Combustion: These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances: Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions: SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards: As with most organic solids, fire is possible at elevated temperatures
Special Remarks on Explosion Hazards: Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

6 Accidental release measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill:
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.
2

7 Handling and storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, alkalis.
Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

8 Exposure controls and personal protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection:
Safety glasses. Lab coat. Gloves (impervious). Dust respirator. Be sure to use an approved/certified respirator or equivalent. The dust respirator should be used for conditions where exposure has exceeded recommended exposure limits, dust is apparent, and engineering controls(adequate ventilation) are not feasible.
Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits:
No exposure guidelines have been established.
ACGIH, NIOSH and OSHA have not developed exposure limits for this product.
The exposure limits given below are for particulates not otherwise classified:
ACGIH: 10 mg/m3 TWA (Total Inhalable fraction); 3 mg/m3 TWA (Respirable fraction)
OSHA: 15 mg/m3 TWA (Total dust); 5 mg/m3 TWA (Respirable Fraction)

Material Safety Data Sheet

Trade name: Citric acid

9 Physical and chemical properties

Form **Odor** **Color**	Solid. (Crystalline powde) Odorless. Not available.
Solubility	Soluble in cold water, hot water, diethyl ether. Insoluble in benzene.
Taste	Acid. (Strong.)
pH (1% soln/water)	Not available.
Molecular Weight	192.13 g/mole
Boiling Point	Decomposes.
Melting Point	153ºC (307.4ºF)
Critical Temperature	Not available.
Specific Gravity	1.665 (Water = 1)
Vapor Pressure	Not applicable.
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Water/Oil Dist. Coeff.	The product is more soluble in water; log(oil/water) = -1.7
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, diethyl ether.

10 Stability and reactivity

Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Excess heat, incompatible materials
Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, metals, alkalis.
Corrosivity: Corrosive in presence of aluminum, of zinc, of copper.
Non-corrosive in presence of glass.
Special Remarks on Reactivity: Incompatible with oxidizing agents, potassium tartrate, alkali, alkaline earth carbonates and bicarbonates, acetates, and sulfides, metal nitrates
Special Remarks on Corrosivity: Will corrode copper, zinc, aluminum and their alloys.
Polymerization: Will not occur.

11 Toxicological information

Routes of Entry: Inhalation. Ingestion.
Toxicity to Animals: Acute oral toxicity (LD50): 3000 mg/kg [Rat].
Chronic Effects on Humans: May cause damage to the following organs: teeth.
Other Toxic Effects on Humans: Hazardous in case of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant, sensitizer), of ingestion.
Special Remarks on Toxicity to Animals: LDL[Rabbit] - Route: oral; Dose: 7000mg/kg
Special Remarks on Chronic Effects on Humans: Not available.
Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin: Causes mild to moderate skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Eyes: Causes moderate to severe eye irritation and possible injury.
Ingestion: May cause gastrointestinal (digestive) tract irritation with nausea, vomiting, diarrhea. Excessive intake

Material Safety Data Sheet

Trade name: Citric acid

11 Toxicological information (continue)

may cause erosion of teeth and hypocalcemia (calcium deficiency in blood). May affect behavior/central nervous system (tremor, convulsions, muscle contraction or spasticity).
Inhalation: Causes moderate respiratory tract and mucous membrane irritation.
Chronic Potential Health Effects:
Frequent intake of citrated beverages may cause erosion of dental enamel and irritation of mucous membranes.

12 Ecological information

Ecotoxicity: Not available.
BOD5 and COD: Not available.
Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation: Not available.

13 Disposal considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14 Transport information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Material Safety Data Sheet

Trade name: Citric acid

15 Regulations (continue)

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

BioinGentech Ltda.
Genetic Engineering

Material Safety Data Sheet

1 Identification of substance

Trade name: RNase Free H20
Article number: A103
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Chemical Name	CAS#	Weight %
Water	7732-18-5	100

3 Hazards identification

Emergency Overview
The product contains no substances which at their given concentration, are considered to be hazardous to health

Principle Routes of Exposure/
Potential Health effects
Eyes: No eye irritation.
Skin: Non-irritating to the skin.
Inhalation: Not applicable.
Ingestion: No information available

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Organ Effects: No information available

HMIS

Health	0
Reactivity	0
Flammability	0

4 First aid measures

Skin contact: Not hazardous.
Eye contact: Not hazardous.
Ingestion: Not hazardous.
Inhalation: Not hazardous.
Notes to physician: No information available.

5 Fire fighting measures

Suitable extinguishing media: The product is not flammable.
Special protective equipment for firefighters: The product is not flammable.

Material Safety Data Sheet

Trade name: RNase Free H20

6 Accidental release measures

Personal precautions: Not applicable.
Methods for cleaning up: Not applicable.

7 Handling and storage

Handling: No special handling advice required
Storage: Keep in properly labelled containers

8 Exposure controls and personal protection

Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Water	-	-	-	-

Engineering measures No special precautions required

Personal protective equipment
Respiratory protection: No special protective equipment required.
Hand protection: No special protective equipment required.
Eye protection: Not hazardous.
Skin and body protection: Not hazardous.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls: No special environmental precautions required.

9 Physical and chemical propertie (continue)

General Information

Form	Liquid
Boiling point/range	100**°C** 212**°F**
Melting point/range	0**°C** 32**°F**
Flash point	**°C** No data available **°F** No data available
Autoignition temperature	**°C** No data available **°F** No data available
Oxidizing properties	No information available
Water solubility	soluble

10 Stability and reactivity

Stability: Stable.
Materials to avoid: Water-reactive solid, n.o.s. Water reactive liquid, n.o.s.
Hazardous decomposition products: None under normal use.
Polymerization: Hazardous polymerisation does not occur.

Material Safety Data Sheet

Trade name: RNase Free H20

11 Toxicological information

Acute toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
Water	No data available	No data available	No data available

Principle Routes of Exposure/
Potential Health effects
Eyes: No eye irritation.
Skin Non-irritating to the skin.
Inhalation: Not applicable.
Ingestion: No information available

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available
Target Organ Effects: No information available

12 Ecological information

Ecotoxicity effects Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants
Mobility Completely soluble.
Biodegradation Inherently biodegradable.
Bioaccumulation Does not bioaccumulate.

13 Disposal considerations

Dispose of in accordance with local regulations

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

Material Safety Data Sheet

Trade name: RNase Free H20

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

Material Safety Data Sheet

Trade name: RNase Free H20

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Guanidine isothiocyanate
Article number: A104
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Chemical Name	CAS#	Weight %
Guanidine isothiocyanate	593-84-0	15-40

3 Hazards identification

Emergency Overview
Harmful if swallowed
Irritating to eyes and skin.
Irritating to skin

Principle Routes of Exposure/
Potential Health effects
Eyes: Irritating to eyes.
Skin: Irritating to skin.
Inhalation May cause irritation of respiratory tract.
Ingestion Harmful if swallowed.

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Organ Effects: No information available

HMIS

Health	1
Reactivity	0
Flammability	0

4 First aid measures

Skin contact Wash off immediately with plenty of water
Eye contact Rinse thoroughly with plenty of water, also under the eyelids.
Ingestion Never give anything by mouth to an unconscious person
Inhalation Move to fresh air
Notes to physician Treat symptomatically.

5 Fire fighting measures

Suitable extinguishing media: Water spray. Carbon dioxide (CO2). Foam. Dry powder.
Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit

Material Safety Data Sheet

Trade name: Guanidine isothiocyanate

6 Accidental release measures

Personal precautions: Use personal protective equipment.
Methods for cleaning up: Soak up with inert absorbent material.

7 Handling and storage

Handling Avoid contact with skin and eyes.
Storage Keep in properly labelled containers

8 Exposure controls and personal protection

Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Guanidine isothiocyanate	-	-	-	-

Engineering measures: Ensure adequate ventilation, especially in confined areas

Personal protective equipment
Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment
Hand protection: Protective gloves
Eye protection: Safety glasses with side-shields
Skin and body protection: Lightweight protective clothing.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls: Prevent product from entering drains.

9 Physical and chemical properties

General Information

Form:	Liquid

Important Health Safety and Environmental Information

Boiling point/range	**°C** No data available	**°F** No data available
Melting point/range	**°C** No data available	**°F** No data available
Flash point	**°C** No data available	**°F** No data available
Autoignition temperature	**°C** No data available	**°F** No data available
Oxidizing properties	No information available	
Water solubility	No data available	

10 Stability and reactivity

Stability: Stable.
Materials to avoid: No information available
Hazardous decomposition products: No information available
Polymerization: Hazardous polymerisation does not occur.

Material Safety Data Sheet

Trade name: Guanidine isothiocyanate

11 Toxicological information

Acute toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
Thiocyanic acid, compound with guanidine (1:1)	No data available	No data available	No data available

Principle Routes of Exposure/
Potential Health effects
Eyes: Irritating to eyes.
Skin: Irritating to skin. Components of the product may be absorbed into the body through the skin.
Inhalation: May cause irritation of respiratory tract.
Ingestion: Harmful if swallowed.

Specific effects
Carcinogenic effects: No information available
Mutagenic effects: No information available
Reproductive toxicity: No information available
Sensitization: No information available

Target Organ Effects: No information available

12 Ecological information

Ecotoxicity effects No information available.
Mobility No information available.
Biodegradation Inherently biodegradable.
Bioaccumulation Does not bioaccumulate.

13 Disposal considerations

Dispose of in accordance with local regulations

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

Material Safety Data Sheet

Trade name: Guanidine isothiocyanate

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

Material Safety Data Sheet

Trade name: Guanidine isothiocyanate

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: N-Laurolyl Sarcosine Sodium Salt
Article number: A105
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Chemical Name	CAS#	Weight %
N-Laurolyl Sarcosine Sodium Salt	137-16-6	90 - 100%

3 Hazards identification

EMERGENCY OVERVIEW: May cause skin irritation and/or dermatitis

Principle routes of exposure: Skin
Inhalation: May cause irritation of respiratory tract
Ingestion: May be harmful if swallowed.
Skin contact: May cause allergic skin reaction
Eye contact: Avoid contact with eyes
Statements of hazard MAY CAUSE ALLERGIC SKIN REACTION.
Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4 First aid measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Inhalation: Move to fresh air. Call a physician immediately.
Skin contact: Rinse immediately with plenty of water and seek medical advice
Ingestion: Do not induce vomiting without medical advice.
Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Protection of first-aiders: No information available
Medical conditions aggravated by exposure: None known

5 Fire fighting measures

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam
Specific hazards: Burning produces irritant fumes.
Unusual hazards: None known
Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)
and full protective gear
Specific methods: Water mist may be used to cool closed containers.
Flash point: Not determined
Autoignition temperature: Not determined
NFPA rating:
NFPA Health: 0
NFPA Flammability: 0
NFPA Reactivity: 0

Material Safety Data Sheet

Trade name: N-Laurolyl Sarcosine Sodium Salt

6 Accidental release measures

Personal precautions: Use personal protective equipment.
Environmental precautions: Prevent product from entering drains.
Methods for cleaning up: Sweep up and shovel into suitable containers for disposal.

7 Handling and storage

Storage:
ROOM TEMPERATURE
DESICCATE
Handling: Use only in area provided with appropriate exhaust ventilation.
Safe handling advice: Wear personal protective equipment.
Incompatible products: Oxidising and spontaneously flammable products

8 Exposure controls and personal protection

Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Guanidine isothiocyanate	-	-	-	-

Engineering measures: Ensure adequate ventilation, especially in confined areas

Personal protective equipment
Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment
Hand protection: Protective gloves
Eye protection: Safety glasses with side-shields
Skin and body protection: Lightweight protective clothing.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls: Prevent product from entering drains.

9 Physical and chemical properties

Physical state	Powder
Formula	C15H29NO3•'95Na
Molecular weight	293.4
Melting point/range	No data available at this time.
Boiling point/range	No data available at this time.
Density	No data available
Vapor pressure	No data available
Evaporation rate	No data available
Vapor density	No data available
Solubility (in water)	Soluble
Flash point	Not determined
Autoignition temperature	Not determined

Material Safety Data Sheet

Trade name: N-Laurolyl Sarcosine Sodium Salt

10 Stability and reactivity

Stability: Stable under recommended storage conditions.
Polymerization: None under normal processing.
Hazardous decomposition products: Nitrogen oxides (NOx)/ammonia/CN- , Sodium oxides (Na2O)
Materials to avoid: Strong oxidising agents
Conditions to avoid: Exposure to air or moisture over prolonged periods.

11 Toxicological information

Acute toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
Thiocyanic acid, compound with guanidine (1:1)	No data available	No data available	No data available

Chronic toxicity: Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects: May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation: No data is available on the product itself.
Carcinogenic effects: No data is available on the product itself.
Mutagenic effects: No data is available on the product itself.
Reproductive toxicity: No data is available on the product itself.

12 Ecological information

Mobility: No data available
Bioaccumulation: No data available
Ecotoxicity effects: No data available
Aquatic toxicity: May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
N-LAUROYLSARCOSINE SODIUM SALT	Not Listed	Not Listed	Not Listed

Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
N-LAUROYLSARCOSINE SODIUM SALT	Not Listed	Not Listed	Not Listed

Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
N-LAUROYLSARCOSINE SODIUM SALT	Not Listed	Not Listed	Not Listed

Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
N-LAUROYLSARCOSINE SODIUM SALT	Not Listed	indicator 0; Fully sponsored	Not Listed

Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants
N-LAUROYLSARCOSINE SODIUM SALT	Not Listed	Not Listed

Material Safety Data Sheet

Trade name: N-Laurolyl Sarcosine Sodium Salt

13 Disposal considerations

Waste from residues / unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.
Contaminated packaging: Do not re-use empty containers

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Material Safety Data Sheet

Trade name: N-Laurolyl Sarcosine Sodium Salt

15 Regulations (continue)

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Saturated Phenol
Article number: A106
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com
2

2 Composition/Data on components

Chemical Name	CAS#	Weight %
Phenol	108-95-2	80-94
Tris (hydroxymethyl) aminomethane	77-86-1	N/A
Disodium EDTA dihydrate	6381-92-6	N/A

3 Hazards identification

Appearance: Not available. Flash Point: 79.4 deg C.
Danger! Causes severe eye and skin burns. Causes severe digestive and respiratory tract burns. Harmful if swallowed, inhaled, or absorbed through the skin. **Combustible liquid and vapor.** May cause central nervous system effects.
Target Organs: Kidneys, central nervous system, liver.
Potential Health Effects
Eye: Contact with liquid or vapor causes severe burns and possible irreversible eye damage.
Skin: Harmful if absorbed through the skin. Causes severe skin irritation and burns. Direct skin contact results in white, wrinkled discoloration, followed by severe burns. Phenol solutions may be absorbed through the skin rapidly to cause systemic poisoning and possible death.
Ingestion: Harmful if swallowed. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Causes digestive tract burns with immediate pain, swelling of the throat, convulsions, and possible coma.
Inhalation: Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May be fatal if exposed to high concentrations. May also cause pallor, loss of appetite, nausea, vomiting, diarrhea, weakness, darkened urine, headache, sweating, convulsions, cyanosis (bluish skin due to deficient oxygenation of the blood), unconsciousness, fatigue, pulmonary edema & coma.
Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Chronic ingestion may cause effects similar to those of acute ingestion. May cause liver and kidney damage. Repeated skin contact may cause dermatitis with dark pigmentation of the skin.

4 First aid measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid imme diately. Do NOT allow victim to rub eyes or keep eyes closed.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner which limits further exposure. SPEEDY ACTION IS CRITICAL!
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 24
cupfuls of milk or water. Never give anything by mouth to an unconscious
person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Treat symptomatically and supportively.

Material Safety Data Sheet

Trade name: Saturated Phenol

5 Fire fighting measures

General Information: As in any fire, wear a selfcontained breathing apparatus in pressuredemand, MSHA/NIOSH (approved or equivalent), and fullb protective gear. Combustible liquid and vapor.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
Flash Point: 79.4 deg C (174.92 deg F)
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 4•'3B Flammability: 2•'3B Instability: 0

6 Accidental release measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

7 Handling and storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from heat and flame. Keep away from sources of ignition. Keep from contact with oxidizing materials. Store in a cool, dry, wellventilated area away from incompatible substances.

8 Exposure controls and personal protection

Exposure limits

Chemical Name	OSHA - Finals PELs	NIOSH	ACGIH
Phenol	5 ppm TWA•'3B 19 mg/m3 TWA	5 ppm TWA•'3B 19 mg/m3 TWA 250 ppm IDLH	5 ppm TWA•'3B Skin potential significant contribution to overall exposure by the cutaneous r oute
Tris (hydroxymethyl) aminomethane	none listed	none listed	none listed
Disodium EDTA dihydrate	none listed	none listed	none listed

OSHA Vacated PELs: Phenol: 5 ppm TWA•'3B 19 mg/m3 TWA Tris (hydroxymethyl) aminomethane: No OSHA Vacated PELs are listed for this chemical. Disodium EDTA dihydrate: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Material Safety Data Sheet

Trade name: Saturated Phenol

9 Physical and chemical properties

Physical State	Liquid
Appearance	Not available.
Odor	none reported
pH	Not available.
Vapor Pressure	Not available.
Vapor Density	Not available.
Evaporation Rate	Not available.
Viscosity	Not available.
Boiling Point	Not available.
Freezing/Melting Point	Not available.
Decomposition Temperature	Not available.
Solubility	Not available.
Specific Gravity/Density	Not available.
Molecular Formula	Not available.
Molecular Weight	Not available.

10 Stability and reactivity

Chemical Stability: Stable.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: Acids (mineral, nonoxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), isocyanates (e.g. methyl isocyanate), metals (alkali and alkaline, e.g. cesium, potassium, sodium), nitrides (e.g. potassium nitride, sodium nitride), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), epoxides (e.g. butyl glycidyl ether), explosives (e.g. ammonium nitrate, hydrazoic acid, sodium azide), polymerizable compounds (e.g. butadiene, methyl acrylate, styrene, vinyl chloride), oxidizing agents (strong, e.g. bromine, hydrogen peroxide, nitrogen dioxide, potassium nitrate), reducing agents (strong, e.g. aluminum carbide, chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetic anyhdride, alkyl.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported

11 Toxicological information

RTECS#:
CAS# 108952:
SJ3325000
CAS# 77861:
TY2900000
CAS# 6381926:
AH4410000
LD50/LC50:
CAS# 108952:
Draize test, rabbit, eye: 5 mg Severe•'3B
Draize test, rabbit, skin: 500 mg/24H Severe•'3B
Draize test, rabbit, skin: 100 mg Mild•'3B
Inhalation, mouse: LC50 = 177 mg/m3•'3B
Inhalation, mouse: LC50 = 177 mg/m3/4H•'3B
Inhalation, rat: LC50 = 316 mg/m3•'3B
Inhalation, rat: LC50 = 316 mg/m3/4H•'3B
Oral, mouse: LD50 = 270 mg/kg•'3B

Material Safety Data Sheet

Trade name: Saturated Phenol

11 Toxicological information (continue)

Oral, rat: LD50 = 317 mg/kg•'3B
Oral, rat: LD50 = 512 mg/kg•'3B
Skin, rabbit: LD50 = 630 mg/kg•'3B
Skin, rat: LD50 = 669 mg/kg•'3B
Skin, rat: LD50 = 1500 mg/kg•'3B

CAS# 77861:
Oral, rat: LD50 = 5900 mg/kg•'3B

CAS# 6381926:

Carcinogenicity:
CAS# 108952:
Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 77861:
Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 6381926:
Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found

12 Ecological information

Ecotoxicity: Daphnia: Fathead Minnow: EC50=4.0 mg/l•'3B 96hour•'3B
cas#108952Daphnia:
Fathead Minnow: EC50=12.0 mg/l•'3B 48hour•'3B
cas#108952
No
data
Environmental: Will not be expected to significantly bioconcentrate in aquatic organisms.
Physical: Hydrolytic and photolytic stability: In water, phenol will not be expected to significantly hydrolyze. Phenol absorbs light in the region 290330 nm and therfore might directly photodegrade.
Other: NOEC for Lolium perenne and Raphanus sativus was 1 mg/l in a plant germination study. The 96hour LC50 was 11 mg/l in Gammarus fasciatus
and the 48hour
LC50 was 11.2 mg/L in Leuciscus idus.

13 Disposal considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA PSeries:
None listed.
RCRA USeries:
CAS# 108952: waste number U188.

Material Safety Data Sheet

Trade name: Saturated Phenol

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Material Safety Data Sheet

Trade name: Saturated Phenol

15 Regulations (continue)

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Material Safety Data Sheet

1 Identification of substance

Trade name: Sodium acetate
Article number: A107
Application of the substance / the preparation Laboratory chemicals
Manufacturer/Supplier:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435
Emergency Information:
www.bioingentech.com - info@bioingentech.com

2 Composition/Data on components

Chemical Name	CAS#	Weight %
Sodium acetate	127-09-3	99-100

3 Hazards identification

Emergency Overview
CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.
SAF-T-DATA(tm) Ratings (Provided here for your convenience)
Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Green (General Storage)
Potential Health Effects
Inhalation:
May cause irritation to the respiratory tract. Symptoms may include coughing, sore throat, labored breathing, and chest pain.
Ingestion:
Large doses may produce abdominal pain, nausea, and vomiting.
Skin Contact:
May cause irritation with redness and pain.
Eye Contact:
Contact may cause irritation, redness, and pain.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
No information found.

4 First aid measures

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion: Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.
Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

Material Safety Data Sheet

Trade name: Sodium acetate

5 Fire fighting measures

Fire: Autoignition temperature: 611C (1132F)
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Listed fire data is for the Anhydrous Material.
Explosion: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Fire Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6 Accidental release measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. Small amounts of residue may be flushed to sewer with plenty of water.

7 Handling and storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate fromany source of heat or ignition. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8 Exposure controls and personal protection

Airborne Exposure Limits: None established.
Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection: Wear protective gloves and clean body-covering clothing.
Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9 Physical and chemical propertie (continue)

Appearance	Colorless crystals.
Odor	Slight acetic acid odor.
Solubility	76 gm/100mls water @ 0C
Density	1.45
pH	8.9
% Volatiles by volume @ 21C (70F)	0
Boiling Point	Not applicable.
Melting Point	Loses water @ 120C (248F); decomposes @ 324C (615.2F)
Vapor Density (Air=1)	No information found.
Vapor Pressure (mm Hg)	No information found.
Evaporation Rate (BuAc=1)	No information found.

Material Safety Data Sheet

Trade name: Sodium acetate

10 Stability and reactivity

Stability: Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products: Emits fumes of acetic acid upon heating and on contact with strong acids.
Hazardous Polymerization: Will not occur.
Incompatibilities: Nitric acid, fluoride, potassium nitrate, strong oxidizers and diketene.
Conditions to Avoid: Incompatibles.

11 Toxicological information

	Cancer Lists	NTP Carcinogen		
Ingredient Name	**CAS#**	**Known**	**Anticipated**	**IARC Category**
Sodium Acetate	(127-09-3)	No	No	None

Hydrate: Investigated as a mutagen. Anhydrous: Oral rat LD50: 3530 mg/kg; inhalation rat LC50: > 30 gm/m3; skin rabbit LD50: > 10 mg/kg; Irritation Data, standard Draize: Skin rabbit 500 mg/24H, mild; standard Draize, Eye rabbit 10 mg, mild. Investigated as a mutagen.

12 Ecological information

Environmental Fate: No information found.
Environmental Toxicity: Freshwater Fish Species Data: 24 Hr LC50 Lepomis macrochirus: 5000 mg/L
Microtox Data: 18 Hr EC50 Pseudomonas putida: 7200 mg/L
Water Flea Data: 48 Hr EC50 water flea: 5800 mg/L

13 Disposal considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14 Transport information

Contact Bioingentech for additional transportation information

RID/ADR **Non-hazardous for road transport.**
IMDG **Non-hazardous for sea transport.**
IATA **Non-hazardous for air transport.**

Material Safety Data Sheet

Trade name: Sodium acetate

15 Regulations

Sara

Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (Specific toxic chemical listings): None of the ingredients are listed.
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.
Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.
Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.
IARC (International Agency for Research on Cancer) None of the ingredients are listed.
NTP (National Toxicology Program) None of the ingredients are listed.
TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.
MAK (German Maximum Workplace Concentration) None of the ingredients are listed.
NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.
OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

Product related hazard informations:
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.

National regulations:
Water hazard class: Generally not hazardous for water.

Material Safety Data Sheet

Trade name: Sodium acetate

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS:
Bioingentech Ltd.
Salas 350, piso 2, Concepción
Chile.
(056) 41-2790435

Bioingentech Ltd.
Salas 350, piso 2
Concepción
CHILE
Tel: +056-41 2790435
e-mail: info@bioingentech.com website: www.bioingentech.com

BioinGentech Ltd.
Genetic Engineering

2009