

SDS DATE: August 12, 2023

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Protein Carbonyl Content
PRODUCT CODES: Cat# MA-150
RESTRICTIONS ON USE: For laboratory research purposes only. Not for drug or household use.
MANUFACTURER: AkrivisBio, Inc.
ADDRESS: 48511 Warm Springs Blvd., Suite 213, Fremont, CA 94539
EMERGENCY PHONE: 408-739-9315
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SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
dinitrophenylhydrazine Solution	Liquid (contains HCl)	11 ml	See below
87% trichloroacetic acid Solution	Liquid	3 ml	See below
10% Streptozocin Solution	Liquid	1 ml	See below
6 M Guanidine Solution	Liquid	20 ml	See below
96-Well Clear Plate	--	1 each	No hazards

Dinitrophenylhydrazine:

Emergency Overview

OSHA Hazards: Flammable solid, Target organ effect, Harmful by ingestion

Target Organs: Blood

Other hazards which do not result in classification: Explosive when dry.

GHS Classification: Flammable solids (Category 1)
Acute toxicity, Oral (Category 4)
Eye irritation (Category 2B)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Warning

Hazard statement(s): H302 Harmful if swallowed.
H320 Causes eye irritation.

Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other hazards: Explosive when dry.

HMIS Classification

Health hazard: 1
Chronic health hazard: *
Flammability: 3
Physical hazards: 3

NFPA Rating

Health Hazard: 1
Fire: 3
Reactivity Hazard: 3

Potential Health Effects

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

Hydrochloric acid:

Emergency Overview

OSHA Hazards: Corrosive

GHS Classification: Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

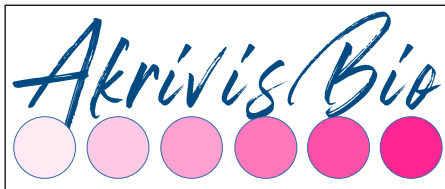
Pictogram:



Signal word: Danger

Hazard statement(s): H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statement(s): P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
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
Flammability: 0
Physical hazards: 0

NFPA Rating

Health Hazard: 3
Fire: 0
Reactivity Hazard: 0

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: May be harmful if swallowed.

Trichloroacetic acid:**Emergency Overview**

OSHA Hazards: Target organ effect, Corrosive, Carcinogen

Target Organs: Central nervous system

Other hazards which do not result in classification: Vesicant

GHS Classification:

Acute toxicity, Oral (Category 5)
Skin corrosion (Category 1A)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements**Pictogram:****Signal word:**

Danger

Hazard statement(s):

H303 May be harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P273 Avoid release to the environment.
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: 1
Physical hazards: 0

NFPA Rating

Health Hazard: 3
Fire: 1
Reactivity Hazard: 0

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. Causes severe eye burns.

Ingestion: May be harmful if swallowed.

Streptozocin:**Emergency Overview**

OSHA Hazards: Carcinogen, Target organ effect

Target Organs: Pancreas, Liver, Kidney, Blood, Reproductive system

GHS Classification:

Carcinogenicity (Category 1B)

GHS Label elements, including precautionary statements**Pictogram:****Signal word:**

Danger

Hazard statement(s):

H350 May cause cancer.

Precautionary statement(s):

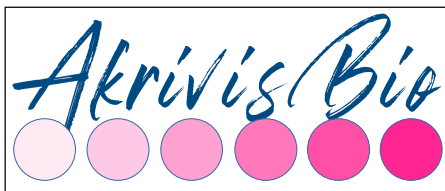
P201 Obtain special instructions before use.
P281 Use personal protective equipment as required.
P308+P313 IF exposed or concerned: Get medical advice/attention.

HMIS Classification

Health hazard: 0
Chronic health hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health Hazard: 0
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: May be harmful if swallowed.

Guanidine HCl:

Emergency Overview

OSHA Hazards: Target organ effect, Toxic by ingestion, Irritant

Target Organs: Bone marrow, Nerves

GHS Classification: Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)

GHS Label elements, including precautionary statements

Pictogram:



Signal word:

Warning

Hazard statement(s):

H301 Toxic if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H333 May be harmful if inhaled.

Precautionary statement(s):

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P284 Wear respiratory protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330 Rinse mouth.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

HMIS Classification

Health hazard: 2

Chronic health hazard: *

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapors may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula
2,4-dinitrophenylhydrazine (DNPH)	119-26-6	204-309-3	198.14	C ₆ H ₆ N ₄ O ₄
Hydrogen chloride	7647-01-0	231-595-7	36.46	HCl
Trichloroacetic acid	76-03-9	200-927-2	163.39	C ₂ HCl ₃ O ₂
Streptozocin	18883-66-4	242-646-8	265.22	C ₈ H ₁₅ N ₃ O ₇
Guanidine hydrochloride	50-01-1	200-002-3	95.53	CH ₅ N ₃ · HCl

SECTION 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.

SECTION 5: FIRE-FIGHTING MEASURES

Condition of flammability: Not flammable or combustible.

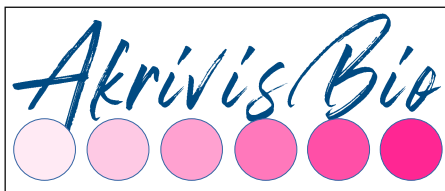
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous combustion products formed under fire conditions— see section 10.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. 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 for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Soak up with inert absorbent material and dispose of as hazardous waste.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: +4°C.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Hydrochloric acid:

Components	CAS-No.	Value	Control parameters	Basis
Hydrochloric acid	7647-01-0	C	2 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Upper respiratory tract irritation. Not classifiable as a human carcinogen.			
		C	5 ppm 7 mg/m ³	USA. Occupational Exposure Limits (OSHA) – Table Z-1: Limits for Air Contaminants
	The value in mg/m ³ is approximate. Ceiling limit is to be determined from breathing-zone air samples.			
		C	5 ppm 7 mg/m ³	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
		C	5 ppm 7 mg/m ³	USA. NIOSH Recommended Exposure Limits
	Often used in an aqueous solution.			

Trichloroacetic acid:

Components	CAS-No.	Value	Control parameters	Basis
Trichloroacetic acid	76-03-9	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Eye & upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.			
		TWA	1 ppm 7 mg/m ³	USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1 ppm 7 mg/m ³	USA. NIOSH recommended exposure limits

Dinitrophenylhydrazine, Streptozocin, Guanidine HCl:

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 respirator with multi-purpose 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

Tightly fitting safety goggles. Face shield (8-inch minimum). 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.

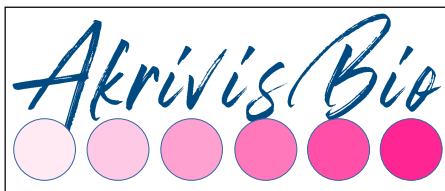
Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Dinitrophenylhydrazine	Hydrochloric acid	Trichloroacetic acid
Appearance:	Red powder	Light yellow liquid	White crystalline powder
pH:	No data available	No data available	1 at 81.7 g/l at 25 °C (77 °F)
Water Solubility:	No data available	Soluble	Completely soluble
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	No data available	>100 °C (>212 °F)	196 °C (385 °F)
Melting Point (°C):	199-203 °C (390-397 °F)	-30 °C (-22 °F)	54-58 °C (129-136 °F)
Flash Point (°C):	No data available	No data available	>113 °C (>235 °F)
Ignition Temperature (°C):	No data available	No data available	No data available
Density:	No data available	1.18 g/ml	1.62 g/cm ³ at 25 °C (77 °F)

Property	Streptozocin	Guanidine HCl
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Appearance:	Light yellow powder	White crystalline
pH:	No data available	4.5-6 at 573 g/l at 25 °C (77 °F)
Water Solubility:	Soluble	Completely soluble
Other Solubility:	No data available	No data available
Boiling Point (°C):	No data available	No data available
Melting Point (°C):	121 °C (250 °F)	180-185 °C (356-365 °F)
Flash Point (°C):	No data available	No data available
Ignition Temperature (°C):	No data available	No data available
Density:	No data available	1.345 g/cm ³ at 25 °C (77 °F)

SECTION 10: STABILITY AND REACTIVITY

Property	Dinitrophenylhydrazine	Hydrochloric acid	Trichloroacetic acid
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	May be shock-sensitive if dry. Heat, flames, and sparks. Extremes of temperature and direct sunlight..	No data available	Exposure to moisture. Heat.
Materials to avoid:	Strong oxidizing agents	Bases, amines, alkali metals, metals, permanganate, fluorine, metal acetylides, hexalithium disilicide	Strong oxidizing agents, strong bases, amines
Hazardous decomposition products:	Carbon oxides, nitrogen oxides	Hydrogen chloride gas	Carbon oxides, hydrogen chloride gas

Property	Streptozocin	Guanidine HCl
Chemical stability:	Stable under recommended storage conditions	
Conditions to avoid:	No data available	No data available
Materials to avoid:	Strong oxidizing agents, strong acids, strong bases	Strong oxidizing agents
Hazardous decomposition products:	Carbon oxides, nitrogen oxides	Carbon oxides, nitrogen oxides, hydrogen chloride gas

SECTION 11: TOXICOLOGICAL INFORMATION

Dinitrophenylhydrazine:

Acute toxicity: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation – 24 h

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 (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

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

Skin: Harmful if absorbed through skin. May cause skin irritation.

Eyes: Causes eye irritation.

Ingestion: Harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Synergistic effects: no data available

Additional information: RTECS: not available

Hydrochloric acid:

Acute toxicity: no data available

Skin corrosion/irritation: Skin – rabbit – causes burns

Serious eye damage/eye irritation: Eyes – rabbit – corrosive to eyes

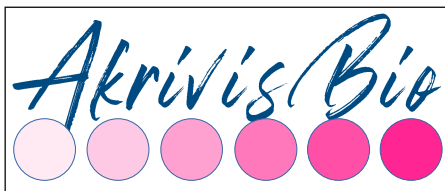
Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Hydrchloric acid)

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 (GHS): The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Specific target organ toxicity – repeated exposure (GHS): 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.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Additional information: RTECS: MW5025000

Trichloroacetic acid:

Acute toxicity: LD50 Oral – rat – 3,320 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: Eyes – rabbit – severe eye irritation – 5 s

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Trichloroacetic acid)

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 (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): 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.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns. Causes severe eye burns.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Additional information: RTECS: AJ7875000

Streptozocin:

Acute toxicity: LD50 Oral – rat – 5,150 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Laboratory experiments have shown mutagenic effects.

Genotoxicity in vitro – human – Kidney → DNA damage

Genotoxicity in vitro – rat – Liver → Unscheduled DNA synthesis

Genotoxicity in vitro – hamster – Lungs → Sister chromatid exchange

Genotoxicity in vivo – rat – Oral → DNA damage

Genotoxicity in vivo – rat – Intraperitoneal → Unscheduled DNA synthesis

Carcinogenicity: Possible human carcinogen

IARC: 2B – Group 2B: Possibly carcinogenic to humans (Streptozocin)

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: Reasonably anticipated to be a human carcinogen (Streptozocin)

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 (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects

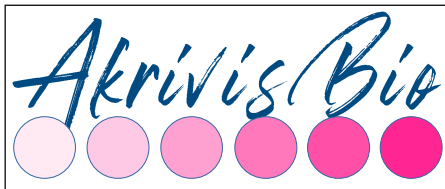
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

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

Eyes: May cause eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause vomiting.



Additional information: RTECS: LZ5775000

Guanidine HCl:

Acute toxicity: LD50 Oral – rat – 475 mg/kg → Remarks: Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Excitement. Diarrhea.

LD50 Oral – mouse – 571 mg/kg → Remarks: Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Muscle contraction or spasticity. Behavioral: Irritability.

LD50 Oral – rat – 1,120 mg/kg

LC50 Inhalation – rat – 4 h – 5.3 mg/l

Skin corrosion/irritation: Skin – rabbit – skin irritation.

Serious eye damage/eye irritation: Eyes – rabbit – irritation to eyes.

Respiratory or skin sensitization: Buehler Test – guinea pig – did not cause sensitization on laboratory animals.

Germ cell mutagenicity: Not mutagenic in Ames Test.

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 (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. Vapors may cause drowsiness and dizziness.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

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.

Additional information: RTECS: MF4300000

SECTION 12: ECOLOGICAL INFORMATION

Hydrochloric acid

Persistence and degradability: no data available

Toxicity: Toxicity to fish → LC50 – Gambusia affinis (Mosquito fish) – 282 mg/l – 96 h (Hydrochloric acid)

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Trichloroacetic acid:

Persistence and degradability: Biodegradability (Zahn-Wellens Test) → Result: 5% - not readily biodegradable

Toxicity: Toxicity to fish → LC50 – Pimephales promelas (fathead minnow) – 2,000 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates → EC50 – Daphnia magna (Water flea) – 1,460-2,000 mg/l – 48 h

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

Guanidine HCl:

Persistence and degradability: Biodegradability → Result: not readily biodegradable

Toxicity: Toxicity to fish → LC50 – Leuciscus idus (Golden orfe) – 1,759 mg/l

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

SECTION 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. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Contaminated packaging: Dispose of as unused product.

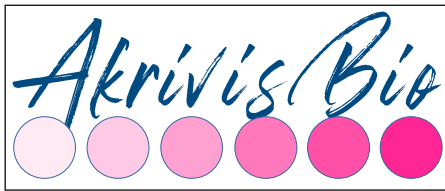
SECTION 14: TRANSPORT INFORMATION

Dinitrophenylhydrazine:

DOT (US): UN-number: 1325, Class: 4.1, Packing group: II; Proper shipping name: Flammable solids, organic, n.o.s.; Marine pollutant: No; Poison Inhalation Hazard: No

IMDG: UN-number: 3380, Class: 4.1, Packing group: I; EMS-No: F-B, S-J; Proper shipping name: DESENSITIZED EXPLOSIVE, SOLID, N.O.S.; Marine pollutant: No

IATA: UN-number: 3380, Class: 4.1, Packing group: I; Proper shipping name: Desensitized explosive, solid, n.o.s.; IATA Passenger: Not permitted for transport; IATA Cargo: Not permitted for transport



Hydrochloric acid

DOT (US): UN-number: 1789, Class: 8, Packing group: II; Proper shipping name: Hydrochloric acid; Reportable Quantity (RQ): 13,514 lbs.; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 1789, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: HYDROCHLORIC ACID; Marine pollutant: No
IATA: UN-number: 1789, Class: 8, Packing group: II; Proper shipping name: Hydrochloric acid

Trichloroacetic acid:

DOT (US): UN-number: 1839, Class: 8, Packing group: II; Proper shipping name: Trichloroacetic acid; Marine pollutant: No; Poison inhalation hazard: No
IMDG: UN-number: 1839, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: TRICHLOROACETIC ACID; Marine pollutant: No
IATA: UN-number: 1839, Class: 8, Packing group: II; Proper shipping name: Trichloroacetic acid

Streptozocin:

DOT (US): UN-number: 3077, Class: 9, Packing group: III; Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Streptozocin); Reportable Quantity (RQ): 1 lb.; Marine pollutant: No; Poison inhalation hazard: No
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

Guanidine HCl:

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

SECTION 15: REGULATORY INFORMATION

OSHA Hazards: Dinitrophenylhydrazine: Flammable solid, Target organ effect, Harmful by ingestion

Hydrochloric acid: Corrosive

Trichloroacetic acid: Target organ effect, Corrosive, Carcinogen

Streptozocin: Carcinogen, Target organ effect

Guanidine HCl: Target organ effect, Toxic by ingestion, Irritant

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

SARA 313 Components: The following components are subject to reporting levels established by SARA Title II, Section 313:

Hydrochloric acid: CAS-No. 7647-01-0; Revision Date: 1993-04-24

SARA 311/312 Hazards: Dinitrophenylhydrazine: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Hydrochloric acid: Acute Health Hazard

Trichloroacetic acid & Guanidine HCl: Acute Health Hazard, Chronic Health Hazard

Streptozocin: Chronic Health Hazard

Massachusetts Right To Know Components: Hydrochloric acid: CAS-No. 7647-01-0; Revision Date: 1993-04-24

Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Streptozocin, CAS-No. 18883-66-4; Revision Date: 1993-04-24

Pennsylvania Right To Know Components: Dinitrophenylhydrazine, CAS-No. 119-26-6

Hydrochloric acid: CAS-No. 7647-01-0; Revision Date: 1993-04-24

Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Streptozocin, CAS-No. 18883-66-4; Revision Date: 1993-04-24

Guanidine HCl, CAS-No. 50-01-1

New Jersey Right To Know Components: Dinitrophenylhydrazine, CAS-No. 119-26-6

Hydrochloric acid: CAS-No. 7647-01-0; Revision Date: 1993-04-24

Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Streptozocin, CAS-No. 18883-66-4; Revision Date: 1993-04-24

Guanidine HCl, CAS-No. 50-01-1

California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause cancer:

Streptozocin, CAS-No. 18883-66-4; Revision Date: 2007-09-28

EU regulations

Component	Risk Phrases	Safety Phrases
Dinitrophenylhydrazine	R1, R11, R22	S35
Hydrochloric acid	R34, R37	S26, S45
Trichloroacetic acid	R35, R50/53	S26, S36/37/39, S45, S60, S61
Streptozocin	R45	S45, S53
Guanidine HCl	R22, R36/38	S22

SECTION 16: OTHER INFORMATION

DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. AkrivisBio Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.