SAFETY DATA SHEET

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

Product identifier

Product Name Ammonia Salicylate Reagent

Safety data sheet number M00127

Other means of identification

Product Code(s)

2653299

Component of Kits or Sets 2508400; 2508500; 251232; 251232K; 251233; 251233K; 251237; 251237K; 251239; 251239K; 251242; 251242K; 2590100; 2668000; 2668000Q; 2687900K; 2688800; 2688800K; 2690400; 2690600; 2690800; 2691100; 2691700; 2922400; 2922400K; 2922401; 2922401K; 2922500; 2922500K; 2922501; 2922501K; 2922600; 2922600K; 2922601; 2922601K; 2923200; 2923300; 4670040; 5870040; 5870040K; 5870040PCA; 5870040RGT

Manufacturer Address

Hach Company
P.O.Box 389 Loveland, CO 80539 USA
(970) 669-3050

Emergency Telephone

(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

Product Information

Chemical Name Not applicable

Formula Not applicable

CAS No Not applicable

Alternate CAS Number Not applicable

2. HAZARDS IDENTIFICATION

GHS - Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Signal word - Danger

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H335 - May cause respiratory irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor 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
P310 - Immediately call a POISON CENTER or doctor
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Name	CAS No	EC No	Percent Range
Sodium salicylate	54-21-7	200-198-0	30 - 50
Trisodium citrate	68-04-2	200-675-3	30 - 50
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	868-18-8	212-773-3	7 - 13
Sodium nitroferricyanide	14402-89-2	238-373-9	0.1 - 1
m-Nitrophenol	554-84-7	209-073-5	0.1 - 1

4. FIRST AID MEASURES

Description of first aid measures

General advice In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician.

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.

Self-protection of the first aider Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11: TOXICOLOGICAL INFORMATION.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Fire-fighting Measures

Flammable properties
During a fire, this product decomposes to form toxic gases. Material is not classified as flammable according to GHS criteria.

Suitable Extinguishing Media
Dry chemical. Carbon dioxide. Alcohol foam. Water.

Unsuitable extinguishing media
Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
This product will not burn or explode.

Hazardous combustion products May emit acrid smoke and fumes.

Protective equipment and precautions for firefighters
Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

Environmental precautions Avoid release to the environment. See Section 12 for additional ecological information.

Methods for containment Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Flammability class Not applicable

Incompatible materials Acids. iodine. Iron Salts. lead acetate. organic materials. Oxidizers. Silver Nitrate. sodium phosphate.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	OSHA PEL	ACGIH TLV	NIOSH IDLH	Indonesia	Indonesia STELs	Philippines	Philippines Carcinogen
Sodium nitroferricyanide (0.1 - 1) CAS#: 14402-89-2	TWA: 5 mg/m³ (vacated) TWA: 1 mg/m³ (vacated) TWA: 5 mg/m³ *	TWA: 1 mg/m³	IDLH: 25 mg/m³ CN TWA: 1 mg/m³ Fe	NDF	NDF	TWA: 5 mg/m³ SKN*	NDF

Chemical Name	India	Thailand	Russia	Israel	South Africa
Sodium nitroferricyanide (0.1 - 1) CAS#: 14402-89-2	TWA: 5 mg/m³ Skin	NDF	NDF	TWA: 1 mg/m³	NDF
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	NDF	NDF	TWA: 3 mg/m³ STEL: 6 mg/m³ Skin	NDF	NDF

Legend See section 16 for terms and abbreviations

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

Engineering Controls Showers. Eyewash stations. Ventilation systems.

Personal Protective Equipment

Eye/face protection Wear tight sealing safety goggles and/or face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water. Avoid creating dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid

Gas Under Pressure Not classified according to GHS criteria

Appearance	powder	**Color**	Tan
Odor	Odorless	**Odor threshold**	No data available

Property	**Values**	**Remarks • Method**
Molecular weight	No data available	
pH	7.84	5% Solution;
Melting point/freezing point	97 °C / 207 °F	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	1.689	
Partition Coefficient (n-octanol/water)	No data available	
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Other Information

Metal Corrosivity	Not classified as corrosive to metal according to GHS criteria
Steel Corrosion Rate	Not applicable
Aluminum Corrosion Rate	Not applicable
Volatile Organic Compounds (VOC) Content	Not applicable.
Bulk density	No data available
Explosive properties	Not classified according to GHS criteria.

Explosion data	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Flammable properties	During a fire, this product decomposes to form toxic gases. Material is not classified as flammable according to GHS criteria.
Flammability Limit in Air	
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Flash point	Not applicable
Method	No information available
Oxidizing properties	Not classified according to GHS criteria.
Reactivity propeties	Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

10. STABILITY AND REACTIVITY

Reactivity propeties	Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Stability	Stable under normal conditions.
Special dangers of the product	None reported.
Conditions to avoid	Heating to decomposition. Extreme temperatures. Poor Ventilation.
Incompatible materials	Acids. iodine. Iron Salts. lead acetate. organic materials. Oxidizers. Silver Nitrate. sodium phosphate.

Hazardous Decomposition Products cyanide. Nitrogen oxides. sodium oxides.

Possibility of Hazardous Reactions None under normal processing.

Explosive properties
Not classified according to GHS criteria.

Upper explosion limit	No data available
Lower explosion limit	No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported.

Sensitivity to Mechanical Impact
None reported.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information	Corrosive to eyes. May cause respiratory irritation. Causes skin irritation. Harmful if swallowed.
Inhalation	Avoid breathing dust/fume/gas/mist/vapors/spray. Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin contact	Causes skin irritation.
Ingestion	Harmful if swallowed. Ingestion may cause irritation to mucous membranes.
Aggravated Medical Conditions	Skin disorders. Eye disorders. Respiratory disorders.
Toxicologically synergistic products	Exposure to and/or consumption of alcohol may increase toxic effects of this product.
Toxicokinetics, metabolism and distribution	See ingredients information below.

Chemical Name	Toxicokinetics, metabolism and distribution
Sodium salicylate (30 - 50) CAS#: 54-21-7	Sodium Salicylate is the sodium salt of salicylic acid which is the precursor of aspirin.
Trisodium citrate (30 - 50) CAS#: 68-04-2	Citric Acid is a important component of the Krebs Cycle.
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Based on the rapid urinary elimination of the mononitrophenols, the compounds may be restricted primarily to the blood and urine following absorption by humans.

Product Acute Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

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

ATEmix (oral)	1,666.00 mg/kg

Ingredient Acute Toxicity Data

Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Rat LD_{50}	930 mg/kg	None reported	**Behavioral** Convulsions or effect on seizure threshold Muscle contraction or spasticity	RTECS (Registry of Toxic Effects of Chemical Substances)
Trisodium citrate (30 - 50) CAS#: 68-04-2	Rat LD_{50}	> 8000 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt	Mouse LD_{50}	4360 mg/kg	None reported	None reported	EPA (United States Environmental Protection Agency)

(7 - 13) CAS#: 868-18-8					
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Rat LD_{50}	328 mg/kg	None reported	None reported	Vendor SDS
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Sodium salicylate (30 - 50) CAS#: 54-21-7	Mouse LD_{50}	540 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	Rabbit LD_{50}	5290 mg/kg	None reported	None reported	EPA (United States Environmental Protection Agency)
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Dog LD_{50}	83 mg/kg	None reported	None reported	Vendor SDS
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Sodium salicylate (30 - 50) CAS#: 54-21-7	Human LD_{Lo}	700 mg/kg	None reported	**Lungs, Thorax, or Respiration** Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Skin Corrosion/Irritation Data
No data available.

Ingredient Skin Corrosion/Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Standard Draize Test	Rabbit	500 mg	4 hours	Mild skin irritant	No information available
Trisodium citrate (30 - 50) CAS#: 68-04-2	Patch test	Rabbit	None reported	None reported	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Standard Draize Test	Rabbit	20 mg	24 hours	Mild skin irritant	Vendor SDS

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and

						sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Standard Draize Test	Rabbit	100 mg	1 hours	Corrosive to eyes	ECHA (The European Chemicals Agency)
Trisodium citrate (30 - 50) CAS#: 68-04-2	None reported	Rabbit	None reported	None reported	Mild eye irritant	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	None reported	Human	None reported	None reported	Not corrosive or irritating to eyes	ECHA (The European Chemicals Agency)
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Standard Draize Test	Rabbit	5 mg	24 hours	Not corrosive or irritating to eyes	Vendor SDS

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route .

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Based on human experience	Human	Not confirmed to be a skin sensitizer	Vendor SDS
Trisodium citrate (30 - 50) CAS#: 68-04-2	None reported	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	None reported	Human	Not confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)

Respiratory Sensitization Exposure Route .

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Based on human experience	Human	Not confirmed to be a respiratory sensitizer	Vendor SDS
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	None reported	Human	Not confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route No data available.

Dermal Exposure Route No data available.

Inhalation (Dust/Mist) Exposure Route No data available.

Inhalation (Vapor) Exposure Route No data available.

Inhalation (Gas) Exposure Route No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Sodium salicylate	54-21-7	-	-	-	-
Trisodium citrate	68-04-2	-	-	-	-
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	868-18-8	-	-	-	-
Sodium nitroferricyanide	14402-89-2	-	-	-	-
m-Nitrophenol	554-84-7	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present

Product Carcinogenicity Data No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Trisodium citrate (30 - 50) CAS#: 68-04-2	Rat	3000 mg/kg	2 years	None reported	IUCLID (The International Uniform Chemical Information Database)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Germ Cell Mutagenicity*invitro*Data
No data available.

Ingredient Germ Cell Mutagenicity*invitro*Data

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Trisodium citrate (30 - 50) CAS#: 68-04-2	Mutation in microorganisms	*Salmonella typhimurium*	None reported	None reported	Negative test result for mutagenicity	IUCLID (The International Uniform Chemical Information Database)
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Mutation in microorganisms	*Salmonella typhimurium*	1 mg/plate	None reported	Positive test result for mutagenicity	CCRIS (Chemical Carcinogenesis Research Information System)
Chemical Name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	DNA repair	Bacillus subtilis	0.5 mg/disc	None reported	Positive test result for mutagenicity	CCRIS (Chemical Carcinogenesis Research Information System)
Chemical Name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Mutation in microorganisms	*Salmonella typhimurium*	2.5 mg/plate	None reported	Positive test result for mutagenicity	CCRIS (Chemical Carcinogenesis Research Information System)

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Germ Cell Mutagenicity*invivo*Data

Oral Exposure Route

Chemical Name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	DNA damage	Rat	30 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical

						Substances)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Reproductive Toxicity Data

Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	Rat TD_{Lo}	40 mg/kg	1 days	**Effects on Newborn** Stillbirth	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Sodium salicylate (30 - 50) CAS#: 54-21-7	Rat TD_{Lo}	250 mg/kg	9 days	**Specific Developmental Abnormalities** Musculoskeletal system	RTECS (Registry of Toxic Effects of Chemical Substances)
Trisodium citrate (30 - 50) CAS#: 68-04-2	Rat	600 mg/kg	None reported	None reported	No information available
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Sodium salicylate (30 - 50) CAS#: 54-21-7	Rat TD_{Lo}	25 mg/kg	21 days	**Effects on Newborn** Weaning or lactation index (e.g. # alive at weaning per # alive at day 4)	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity Based on the classification principles, not classified as hazardous to the environment

Unknown Aquatic Toxicity 0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Product Ecological Data

Aquatic toxicity

Fish No data available

Crustacea No data available

Algae No data available

Terrestrial toxicity

Soil No data available

Vertebrates No data available

Invertebrates No data available

Ingredient Ecological Data

Aquatic toxicity

Fish

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium salicylate (30 - 50) CAS#: 54-21-7	96 hours	*Pimephales promelas*	LC_{50}	1370 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Trisodium citrate (30 - 50) CAS#: 68-04-2	96 hours	*Poecilia reticulata*	LC_{50}	> 18000 mg/L	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	96 hours	None reported	LC_{50}	612000 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Sodium salicylate (30 - 50) CAS#: 54-21-7	96 hours	None reported	LC_{50}	1760 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	48 hours	*Oryzias latipes*	LC_{50}	1.3 mg/L	EPA (United States Environmental Protection Agency)

Crustacea

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Trisodium citrate (30 - 50) CAS#: 68-04-2	None reported	None reported	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	48 Hours	None reported	LC_{50}	263000 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	24 hours	*Daphnia magna*	EC_{50}	35 mg/L	EPA (United States Environmental Protection Agency)

Algae

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Trisodium citrate (30 - 50) CAS#: 68-04-2	96 hours	*Chlorella vulgaris*	EC_{50}	> 18000 mg/L	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	96 hours	None reported	EC_{50}	623770 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

Terrestrial toxicity

Soil No data available

Vertebrates No data available

Invertebrates No data available

Other Information

Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL): Environmentally Hazardous Substances Categorizations

Chemical Name	Category	Persistent	Bioaccumulation	Inherently Toxic to Aquatic Organisms
Sodium nitroferricyanide (0.1 - 1) CAS#: 14402-89-2	Inorganics	Yes	No	Yes

Persistence and degradability
None known.

Product Biodegradability Data
If available, see ingredient data below.

Ingredient Biodegradability Data
Test data reported below

Chemical Name	Test method	Biodegradation	Exposure time	Results
Sodium salicylate (30 - 50) CAS#: 54-21-7	None reported	50%	140 days	Not readily biodegradable
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	None reported	73%	14 days	Readily biodegradable

Bioaccumulation
If available, see ingredient data below.

Product Bioaccumulation Data If available, see ingredient data below.

Ingredient Bioaccumulation Data

Chemical Name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Estimation through BCFBAF v3.01 part of the Estimation Programs Interface (EPI) Suite™	None reported	None reported	BCF = 25.12	Does not have the potential to bioaccumulate

Additional information

Product Information No data available

Partition Coefficient (n-octanol/water) No data available

Ingredient Information

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Sodium salicylate (30 - 50) CAS#: 54-21-7	log K_{ow} = 2.26	No information available
Trisodium citrate (30 - 50) CAS#: 68-04-2	log K_{ow} = -0.76	No information available
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	log K_{ow} = -4.28	No information available
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	log K_{ow} = 1.985	No information available

Mobility
Mobility in soil: Moderate to high mobility. If available, see ingredient data below.

Product Information No data available

Soil Organic Carbon-Water Partition Coefficient No data available

Ingredient Information

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Sodium salicylate (30 - 50) CAS#: 54-21-7	log K_{oc} = 1.34	No information available
Trisodium citrate (30 - 50) CAS#: 68-04-2	log K_{oc} = 0.68	No information available
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	log K_{oc} = -1.33	No information available
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	log K_{oc} = 1.68	No information available

Additional information

Water solubility

Product Information

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Sodium salicylate (30 - 50) CAS#: 54-21-7	Completely soluble	1000000 mg/L	20 °C	68 °F
Trisodium citrate (30 - 50) CAS#: 68-04-2	Completely soluble	425000 mg/L	20 °C	68 °F
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13) CAS#: 868-18-8	Completely soluble	100000 mg/L	20 °C	68 °F
Sodium nitroferricyanide (0.1 - 1) CAS#: 14402-89-2	Soluble	> 1000 mg/L	25 °C	77 °F
m-Nitrophenol (0.1 - 1) CAS#: 554-84-7	Completely soluble	13550 mg/L	25 °C	77 °F

Other adverse effects
Contains a substance with an endocrine-disrupting potential.

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Sodium nitroferricyanide (0.1 - 1) CAS#: 14402-89-2	Chemical Group III	-	-

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Contaminated packaging Do not reuse container. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Special instructions for disposal Dilute to 3 to 5 times the volume with cold water. Flush system with plenty of water. If permitted by regulation Open cold water tap completely, slowly pour the material to the drain. Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

Waste from residues/unused products Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national, and local laws and

regulations.

Basel Convention Codes

Chemical Name	ANNEX I	ANNEX III
Sodium nitroferricyanide 14402-89-2	Y33	-

14. TRANSPORT INFORMATION

IMDG Not regulated

IATA Not regulated

DOT Not regulated

TDG Not regulated

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.
If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

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

Wastes Management Dispose of in accordance with federal, state and local regulations

Basel Convention Codes

Chemical Name	CAS No	ANNEX I	ANNEX III
Sodium salicylate	54-21-7	-	-
Trisodium citrate	68-04-2	-	-

Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	868-18-8	-	-
Sodium nitroferricyanide	14402-89-2	Y33	-
m-Nitrophenol	554-84-7	-	-

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

16. OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH	*Immediately Dangerous to Life or Health*
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	*no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Prepared By Hach Product Compliance Department

Issue Date 20-Jul-2016

Revision Date 31-Aug-2016

Revision Note None.

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

End of Safety Data Sheet