SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name QUANTAB (HR) SLIT PAPER

Other means of identification
Product Code(s)
DL30205

Safety data sheet number M03333

UN/ID no UN3077

Component of Kits or Sets 0Q193971; 15793AQU; 15796AQU; 15796PTM; 16014AQU; 16014BIO; 2751340; 47067; 511071; 512228; 523985; 527804A; 542228A; 5581CLX; 56110; 561140A; 561141A; 561PQP; 562107; 562111; 562182; 711173; 711196; 711196E; 711196H; 711196HK; 777947; 80000CLX; DL40205; HYCL78003; LP18700; PT56579

Recommended use of the chemical and restrictions on use
Recommended Use Analytical reagent.
Uses advised against None.
Restrictions on use None.

Details of the supplier of the safety data sheet

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

Emergency telephone number
(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
NIOSH (RTECS) Number None reported

2. HAZARDS IDENTIFICATION

Classification

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

Acute toxicity - Oral	Category 4
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Danger

Hazard statements
H302 - Harmful if swallowed
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 - May cause an allergic skin reaction
H340 - May cause genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure EUH208 - May produce an allergic reaction

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P284 - Wear respiratory protection
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician
P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Information
Toxic to aquatic life with long lasting effects
Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
Paper	-	50 - 100	-
Silver chromate	7784-01-2	1 - 5	-
Zinc acetate	557-34-6	1 - 5	-
Potassium dichromate	7778-50-9	0.1 - 1	-
Potassium acetate	127-08-2	0.1 - 1	-
Acetic acid	64-19-7	0.1 - 1	-

4. FIRST AID MEASURES

Description of first aid measures

General advice

Immediate medical attention is required. See section 8 for PPE that may be required during handling. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If no local exhaust use approved fume hood and/or respirator. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Remove from exposure, lie down. IF IN EYES: Flush eyes for at least 15 minutes. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. May cause allergic skin reaction. Repeated contact may cause allergic reactions in very susceptible persons.

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Skin contact

Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash off immediately with soap and plenty of water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately flush skin with plenty of water for at least 15 (30 or 60) minutes. Call a physician immediately. Removal of solidified molten material from skin requires medical assistance. In case of contact with Hydrogen fluoride, anhydrous (UN1052), flush skin and eyes with water for 5 minutes; then, for skin exposures rub on a calcium/jelly combination; for eyes flush with a water/calcium solution for 15 minutes. Remove and isolate contaminated clothing and shoes. Wash contaminated clothing before reuse. May cause an allergic skin reaction. Consult a physician if necessary.

Inhalation

Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. May cause allergic respiratory reaction. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Remove from exposure, lie down. Call a POISON CENTER or doctor/physician if you feel unwell. Do not induce vomiting without medical advice.

Self-protection of the first aider

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. First aider: Pay attention to self-protection. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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

May cause sensitization in susceptible persons. Rinse mouth. Causes sensitization.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media None.

Flammable properties
Substance does not burn.

Specific hazards arising from the chemical
In the event of fire and/or explosion do not breathe fumes. May cause sensitization in susceptible persons. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Hazardous combustion products May emit acrid smoke and fumes.

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

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

EC Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

WHMIS Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

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

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly. Soak up with inert absorbent material.

Emergency Response Guide Number 171

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. 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. Keep containers tightly closed in a cool, well-ventilated place.

Flammability class Not applicable

Incompatible materials Strong oxidizing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Silver chromate 1 - 5	NDF	TWA: 5 µg/m³ (vacated) Ceiling: 0.1 mg/m³ Ceiling: 0.1 mg/m³	IDLH: 15 mg/m³ Cr(VI) TWA: 0.0002 mg/m³ Cr
Potassium dichromate 0.1 - 1	TWA: 0.05 mg/m³	TWA: 5 µg/m³ (vacated) Ceiling: 0.1 mg/m³ Ceiling: 0.1 mg/m³	IDLH: 15 mg/m³ Cr(VI) TWA: 0.0002 mg/m³ Cr
Acetic acid 0.1 - 1	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³

Chemical Name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL
Silver chromate 1 - 5	TWA: 0.01 mg/m³ TWA: 0.5 mg/m³	TWA: 0.01 mg/m³ STEL: 0.03 mg/m³	NDF	TWA: 0.01 mg/m³	NDF
Potassium dichromate 0.1 - 1	TWA: 0.05 mg/m³ TWA: 0.5 mg/m³	TWA: 0.025 mg/m³ Ceiling: 0.1 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³
Acetic acid 0.1 - 1	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³	TWA: 10 ppm STEL: 15 ppm

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Silver chromate 1 - 5	NDF	NDF	NDF	TWA: 0.01 mg/m³	NDF
Potassium dichromate 0.1 - 1	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³
Acetic acid 0.1 - 1	TWA: 10 ppm STEL: 15 ppm	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm STEL: 15 ppm	STEL: 15 ppm TWA: 10 ppm

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Silver chromate 1 - 5	NDF	TWA: 0.01 mg/m³ TWA: 0.5 mg/m³ STEL: 0.03 mg/m³ STEL: 1.5 mg/m³	STEL: 0.1 mg/m³ TWA: 0.1 mg/m³

Potassium dichromate 0.1 - 1	TWA: 0.05 mg/m³ SKN+	TWA: 0.05 mg/m³ TWA: 0.5 mg/m³ STEL: 0.15 mg/m³ STEL: 1.5 mg/m³	STEL: 0.1 mg/m³ TWA: 0.1 mg/m³
Acetic acid 0.1 - 1	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³	TWA: 10 ppm STEL: 15 ppm	STEL: 25 ppm STEL: 43 mg/m³ TWA: 10 ppm TWA: 25 mg/m³

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

Legend See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Suitable protective clothing. Gloves made of plastic or rubber.

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

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

Environmental exposure controls
Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains.

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 No information available **Color** No information available

Odor No information available **Odor threshold** No data available

Property	Values	Remarks • Method
Molecular weight	No data available	
pH	No data available	
Melting point/freezing point	No data available	
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)	No data available
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
No information available	No data available	No information available

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
None reported	No information available	No data available	No information available

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	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

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

Chemical stability
Stable under recommended storage conditions.

Special dangers of the product
None reported

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Poor Ventilation. Excess moisture. Extremes of temperature and direct sunlight.

Incompatible materials
Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products
Acrid or harmful gas during a fire.

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	Respiratory sensitizer. Harmful if swallowed. May be harmful by inhalation.
Inhalation	May cause sensitization by inhalation. Avoid breathing dust/fume/gas/mist/vapors/spray. May be harmful if inhaled.

Eye contact	No known effect based on information supplied.
Skin contact	No known effect based on information supplied.
Ingestion	Harmful if swallowed.
Aggravated Medical Conditions	Allergies. Skin disorders. Respiratory disorders. Preexisting eye disorders. Blood disorders. Kidney disorders. Liver disorders. lungs.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	No information available.

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)	1,645.00 mg/kg
ATEmix (inhalation-dust/mist)	12.92 mg/L
ATEmix (inhalation-vapor)	68.86 mg/L

Ingredient Acute Toxicity Data

Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Zinc acetate (1 - 5) CAS#: 557-34-6	Rat LD_{50}	794 mg/kg	None reported	None reported	Vendor SDS
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Rat LD_{50}	25 mg/kg	None reported	None reported	ERMA (New Zealands Environmental Risk Management Authority)
Acetic acid (0.1 - 1) CAS#: 64-19-7	Rat LD_{50}	3310 mg/kg	None reported	None reported	Vendor SDS

Dermal Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Rat LD_{50}	1170 mg/kg	None reported	None reported	ERMA (New Zealands Environmental Risk Management Authority)
Acetic acid (0.1 - 1) CAS#: 64-19-7	Rabbit LD_{50}	1060 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Dust/Mist) Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium dichromate (0.1 - 1)	Rat LC_{50}	0.094 mg/L	4 hours	None reported	ERMA (New Zealands Environmental Risk Management Authority)

CAS#: 7778-50-9					

Inhalation (Vapor) Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Acetic acid (0.1 - 1) CAS#: 64-19-7	Rat LC_{50}	11.4 mg/L	4 hours	None reported	Vendor SDS
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Acetic acid (0.1 - 1) CAS#: 64-19-7	Mouse LC_{50}	5620 mg/L	4 hours	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

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
Zinc acetate (1 - 5) CAS#: 557-34-6	Organization for Economic Co-operation and Development (OECD) - Test 405: Acute Eye Corrosion/Irritation	Rabbit	500 mg	24 hours	**Data Source**	ERMA (New Zealands Environmental Risk Management Authority)
Acetic acid (0.1 - 1) CAS#: 64-19-7	Standard Draize Test	Human	50 mg	24 hours	Mild skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test method**	**Species**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Acetic acid (0.1 - 1) CAS#: 64-19-7	Open Irritation Test	Rabbit	525 mg	None reported	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)

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

Ingredient Eye Damage/Eye Irritation Data
Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Zinc acetate (1 - 5) CAS#: 557-34-6	Standard Draize Test	Rabbit	20 mg	24 hours	**Data Source**	ERMA (New Zealands Environmental Risk Management Authority)
Acetic acid (0.1 - 1) CAS#: 64-19-7	Standard Draize Test	Rabbit	5.0 mg	0.5 minutes	Mild eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

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 No data available.

Respiratory Sensitization Exposure Route No data available.

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

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Zinc acetate (1 - 5) CAS#: 557-34-6	Rat TD_{Lo}	58240 mg/kg	91 days	**Blood** **Kidney, Ureter, or Bladder** Other changes Urine volume decreased or anuria	HSDB (Hazardous Substances Data Bank)

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
Paper	-	-	-	-	-
Silver chromate	7784-01-2	-	Group 1	Known	X
Zinc acetate	557-34-6	-	-	-	-
Potassium dichromate	7778-50-9	A1	Group 1	Known	X
Potassium acetate	127-08-2	-	-	-	-
Acetic acid	64-19-7	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A1 - Known Human Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans

NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present

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 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

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
Zinc acetate (1 - 5) CAS#: 557-34-6	Mutation in microorganisms	*Salmonella typhimurium*	None reported	None reported	Negative test result for mutagenicity	HSDB (Hazardous Substances Data Bank)
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Micronucleus test	Human lymphocyte	0.3 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Zinc acetate (1 - 5) CAS#: 557-34-6	Mutation in mammalian somatic cells	Mouse lymphocyte	10 mg/L	None reported	Positive test result for mutagenicity	HSDB (Hazardous Substances Data Bank)
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Morphological transformation	Human fibroblast	200 nmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Zinc acetate (1 - 5)	Cytogenetic analysis	Human lymphocyte	7 mg/L	None reported	Positive test result for mutagenicity	HSDB (Hazardous

CAS#: 557-34-6						Substances Data Bank)
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	DNA damage	Human fibroblast	500 nmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

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 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

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
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Mouse TD_{Lo}	1710 mg/kg	19 days	**Effects on Embryo or Fetus** Fetotoxicity (except death e.g. stunted fetus) **Effects on Fertility** Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) **Specific Developmental Abnormalities** Craniofacial (including nose and tongue)	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**
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Mouse TD_{Lo}	3420 mg/kg	None reported	**Effects on Fertility** Litter size (e.g. # fetuses per litter; measured before birth) **Specific Developmental Abnormalities**	RTECS (Registry of Toxic Effects of Chemical Substances)

				Skin and appendages	

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 Toxic to aquatic life with long lasting effects.

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
Zinc acetate (1 - 5) CAS#: 557-34-6	96 hours	None reported	LC_{50}	0.88 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	96 hours	*Lepomis macrochirus*	LC_{50}	0.131 mg/L	ERMA (New Zealands Environmental Risk Management Authority)
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Acetic acid (0.1 - 1) CAS#: 64-19-7	48 hours	*Oryzias latipes*	LC_{50}	350 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Crustacea

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	48 Hours	*Daphnia magna*	EC_{50}	0.035 mg/L	ERMA (New Zealands Environmental Risk Management Authority)

Acetic acid (0.1 - 1) CAS#: 64-19-7	48 Hours	None reported	LC_{50}	90.1 mg/L	PEEN (Pan European Ecological Network)
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Acetic acid (0.1 - 1) CAS#: 64-19-7	24 hours	*Artemia salina*	LC_{50}	42 mg/L	PEEN (Pan European Ecological Network)

Algae

Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Zinc acetate (1 - 5) CAS#: 557-34-6	72 Hours	None reported	EC_{50}	1.7 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Zinc acetate (1 - 5) CAS#: 557-34-6	96 hours	None reported	EC_{50}	4.2 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

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**
Zinc acetate (1 - 5) CAS#: 557-34-6	Organic - metal salt	Yes	No	Yes
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Inorganics	Yes	No	Yes

Persistence and degradability
None known.

Product Biodegradability Data
No data available.

Ingredient Biodegradability Data
No data available

Bioaccumulation
None known.

Product Bioaccumulation Data No data available.

Ingredient Bioaccumulation Data No data available

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
Acetic acid (0.1 - 1) CAS#: 64-19-7	log K_{ow} = -0.17	No information available

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
Acetic acid (0.1 - 1) CAS#: 64-19-7	log K_{oc} = 0.062	No information available

Additional information

Water solubility

Product Information No information available

Water solubility classification	Water solubility	Water Solubility Temperature
No information available	No data available	No information available

Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Paper (50 - 100) CAS#: -	Insoluble	< 0.1 mg/L	25 °C	77 °F
Zinc acetate (1 - 5) CAS#: 557-34-6	Soluble	> 1000 mg/L	25 °C	77 °F
Potassium dichromate (0.1 - 1) CAS#: 7778-50-9	Moderately soluble	430 mg/L	0 °C	32 °F
Potassium acetate (0.1 - 1) CAS#: 127-08-2	Slightly soluble	2.53 mg/L	25 °C	77 °F

Acetic acid (0.1 - 1) CAS#: 64-19-7	Soluble	> 1000 mg/L	25 °C	77 °F

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

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 Working in a well-ventilated area,. Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste in countries other than the US. Improper disposal or reuse of this container may be dangerous and illegal. Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number D007, D011

14. TRANSPORT INFORMATION

DOT
- **UN/ID no** UN3077
- **Proper shipping name** Environmentally hazardous substances, solid, n.o.s.
- **Hazard Class** 9
- **Packing Group** III
- **Emergency Response Guide Number** 171

TDG
- **UN/ID no** UN3077
- **Proper shipping name** Environmentally hazardous substances, solid, n.o.s.
- **Hazard Class** 9
- **Packing Group** III

IATA
- **UN/ID no** UN3077
- **Proper shipping name** Environmentally hazardous substances, solid, n.o.s.
- **Hazard Class** 9
- **Packing Group** III
- **ERG Code** 171

IMDG
- **UN/ID no** UN3077
- **Proper shipping name** Environmentally hazardous substances, solid, n.o.s.
- **Hazard Class** 9
- **Packing Group** III
- **Marine pollutant** This material meets the definition of a marine pollutant

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

National Inventories

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Does not comply
AICS	Does not comply
NZIoC	Does not comply

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

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Silver chromate (CAS #: 7784-01-2)	0.1 1.0
Zinc acetate (CAS #: 557-34-6)	1.0
Potassium dichromate (CAS #: 7778-50-9)	0.1

SARA 311/312 Hazard Categories

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

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

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver chromate 7784-01-2	-	X	-	-

Zinc acetate 557-34-6	1000 lb	X	-	X
Potassium dichromate 7778-50-9	10 lb	X	-	X
Acetic acid 64-19-7	5000 lb	-	-	X

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Zinc acetate 557-34-6	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Potassium dichromate 7778-50-9	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ
Acetic acid 64-19-7	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Silver chromate (CAS #: 7784-01-2)	Carcinogen Developmental Female Reproductive Male Reproductive
Potassium dichromate (CAS #: 7778-50-9)	Carcinogen Developmental Female Reproductive Male Reproductive

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Silver chromate 7784-01-2	X	X	X
Zinc acetate 557-34-6	X	X	X
Potassium dichromate 7778-50-9	X	X	X
Acetic acid 64-19-7	X	X	X

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA and HMIS Classifications

NFPA	**Health hazards** - 3	**Flammability** - 1	**Instability** - 0	**Physical and Chemical Properties** Not applicable
HMIS	**Health hazards** - 3	**Flammability** - 1	**Physical hazards** - 0	**Personal protection** - X - See section 8 for more 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	18-May-2016
Revision Date	10-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