



Be Right™

SAFETY DATA SHEET

Issue Date 01-May-2017

Revision Date
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1. IDENTIFICATION

Product identifier

Product Name Cobalt Chloride Solution

Other means of identification

Product Code(s) 1422249

Safety data sheet number M00565

UN/ID no UN1789

Recommended use of the chemical and restrictions on use

Recommended Use Standard solution.

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

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

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

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

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Signal word - Danger



Hazard statements

H290 - May be corrosive to metals
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child

Precautionary statements

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
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P284 - Wear respiratory protection
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P234 - Keep only in original container
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P363 - Wash contaminated clothing before reuse
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P310 - Immediately call a POISON CENTER or doctor/physician
P390 - Absorb spillage to prevent material damage
P405 - Store locked up
P406 - Store in corrosive resistant stainless steel container with a resistant liner
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

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Mixture

Chemical Family Mixture.

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
Hydrochloric acid	7647-01-0	7 - 13%	-
Cobalt(II) chloride, hexahydrate	7791-13-1	1 - 5%	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	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. Immediate medical attention is required. 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	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. Call a physician immediately.
Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician immediately.
Ingestion	IF SWALLOWED: Rinse Mouth. Do NOT induce vomiting. Call a physician immediately.
Self-protection of the first aider	First aider: Pay attention to self-protection. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. 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. 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 Caution: Use of water spray when fighting fire may be inefficient.

Flammable properties

During a fire, irritating and highly toxic gases may be generated by thermal decomposition.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products

This material will not burn.

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

Evacuate personnel to safe areas. Remove all sources of ignition. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

For emergency responders

Wear respiratory protection.

Environmental precautions

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. 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. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Take necessary precautions in observance of pertinent physical hazards. Neutralize spill if necessary. Soak up with inert absorbent material. 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.

Emergency Response Guide Number

157

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Absorb spillage to prevent material damage.

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 dry, cool and well-ventilated place. Keep in properly labeled containers. Keep/store only in original container.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrochloric acid 7 - 13%	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³
Cobalt(II) chloride, hexahydrate 1 - 5%	TWA: 0.02 mg/m ³	NDF	NDF

Chemical Name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	Newfoundland & Labrador OEL
Hydrochloric acid 7 - 13%	Ceiling: 2 ppm Ceiling: 3 mg/m ³	Ceiling: 2 ppm	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7.5 mg/m ³	Ceiling: 2 ppm
Cobalt(II) chloride, hexahydrate 1 - 5%	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Hydrochloric acid 7 - 13%	Ceiling: 2 ppm	Ceiling: 2 ppm	Ceiling: 2 ppm	Ceiling: 2 ppm	Ceiling: 2 ppm
Cobalt(II) chloride, hexahydrate 1 - 5%	TWA: 0.02 mg/m ³ STEL: 0.06 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³ STEL: 0.06 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Hydrochloric acid 7 - 13%	Ceiling: 5 ppm Ceiling: 7.5 mg/m ³	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7 mg/m ³
Cobalt(II) chloride, hexahydrate 1 - 5%	TWA: 0.02 mg/m ³ SKN+	TWA: 0.02 mg/m ³ STEL: 0.06 mg/m ³	NDF

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 If no local exhaust use approved fume hood or self-contained breathing apparatus
If no local exhaust use approved fume hood and/or respirator
Showers
Eyewash stations

Individual protection measures, such as personal protective equipment

Eye/face protection Wear tight sealing safety goggles and/or face protection shield. Avoid contact with eyes.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection Do not breathe gas/fumes/vapor/spray. If no local exhaust use approved fume hood and/or respirator. In case of inadequate ventilation wear respiratory protection.

General Hygiene Considerations Avoid breathing (dust, vapor, mist, gas). Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear suitable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Avoid prolonged or repeated contact with skin. Take off all contaminated clothing and wash it before reuse.

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid

Gas Under Pressure Not classified according to GHS criteria

Appearance aqueous solution

Color red

Odor Odorless

Odor threshold No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	1.3	
Melting point/freezing point	~ -7 °C / 19 °F	Estimation based on theoretical calculation
Boiling point / boiling range	~ 102 °C / 216 °F	Estimation based on theoretical calculation
Evaporation rate	0.95 (water = 1) Estimation based on theoretical calculation	
Vapor pressure	17.027 mm Hg / 2.27 kPa at 20 °C / 68 °F	Estimation based on theoretical calculation
Vapor density (air = 1)	0.63	
Specific gravity (water = 1 / air = 1)	1.025	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	~ 1 cP (mPa s) at 20 °C / 68 °F	

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Kinematic viscosity ~ 0.976 cSt (mm²/s) at 20 °C / 68 °F

Solubility(ies)

Water solubility

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

Solubility in other solvents

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Ethyl alcohol	Soluble	> 1000 mg/L	25 °C / 77 °F
Ether	Soluble	> 1000 mg/L	25 °C / 77 °F
Acetone	Soluble	> 1000 mg/L	25 °C / 77 °F

Other Information

Metal Corrosivity Classified as corrosive to metal according to GHS criteria

GHS Metal Corrosivity Classification Category 1, H290

Steel Corrosion Rate 2.62 mm/yr / 0.1 in/yr

Aluminum Corrosion Rate 8.03 mm/yr / 0.32 in/yr

Bulk density Not applicable

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, irritating and highly toxic gases may be generated by thermal decomposition.

Flammability Limit in Air

Upper flammability limit: No data available

Lower flammability limit: No data available

Flash point No data available

Method No information available

Oxidizing properties Not classified according to GHS criteria.

Reactivity properties 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 properties

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria

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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

Extremes of temperature and direct sunlight. Incompatible materials.

Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

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

NIOSH (RTECS) Number

None reported

Information on Likely Routes of Exposure

Product Information	Corrosive to skin. Corrosive to eyes. Respiratory sensitizer. Harmful if swallowed. Skin sensitizer.
Inhalation	Causes burns. Corrosive by inhalation. May cause sensitization by inhalation.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness. Causes burns.
Skin contact	Cause severe skin burns and eye damage. May cause sensitization by skin contact.
Ingestion	Ingestion causes burns of the upper digestive and respiratory tracts. Harmful if swallowed.
Aggravated Medical Conditions	Eye disorders. Skin disorders. Respiratory disorders.
Toxicologically synergistic products	None known.

Toxicokinetics, metabolism and distribution	See ingredients information below.
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Chemical Name	Toxicokinetics, metabolism and distribution
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Low concentrations of hydrochloric acid solution do not seem to cause adverse effects to animals and its corrosivity may be greatly attributed to any acute deaths, therefore it is not classified for acute toxicity.

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)	1,709.00 mg/kg
ATEmix (dermal)	53,419.00 mg/kg

Ingredient Acute Toxicity Data

Oral Exposure Route If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Rat LD ₅₀	80 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Rat LD ₅₀	234 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Man LD _{Lo}	2.857 mg/kg	None reported	Vascular BP lowering not characterized in autonomic section Lungs, Thorax, or Respiration Respiratory depression Gastrointestinal Other changes	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Rabbit LD ₅₀	> 5010 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Rat LD ₅₀	> 2000 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Inhalation (Dust/Mist) Exposure Route No data available

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Inhalation (Vapor) Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Rat LC ₅₀	16.8 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Human TC _{Lo}	0.05 mg/L	None reported	Lungs, Thorax, or Respiration Cough	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

If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Existing human experience	Human	None reported	None reported	Corrosive to skin	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
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Standard Draize Test	Rabbit	500 mg	4 hours	Mild skin irritant	ECHA (The European Chemicals Agency)

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Existing human experience	Human	None reported	None reported	Corrosive to eyes	No information available
Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Standard Draize Test	Rabbit	100 mg	None reported	Corrosive to eyes	ECHA (The European Chemicals Agency)

Sensitization Information

Product Sensitization Data

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Skin Sensitization Exposure Route

No data available.

Respiratory Sensitization Exposure Route

No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route

If available, see data below.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Patch test	Human	Confirmed to be a skin sensitizer	Vendor SDS

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

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Rat TC _{Lo}	0.000685 mg/L	84 days	Behavioral Muscle contraction or spasticity Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) Kidney, Ureter, or Bladder Other changes in urine composition	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route

No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Hydrochloric acid	7647-01-0	-	Group 3	-	X
Cobalt(II) chloride, hexahydrate	7791-13-1	A3	Group 2B	Reasonably Anticipated	X

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ACGIH (American Conference of Governmental Industrial Hygienists)	A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)	Group 2B - Possibly Carcinogenic to Humans Group 3 - Not classifiable as a human carcinogen
NTP (National Toxicology Program)	Reasonably Anticipated - Reasonably Anticipated to be a Human 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 *in vitro* Data

No data available.

Ingredient Germ Cell Mutagenicity *in vitro* Data

If available, see data below

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Cytogenetic analysis	Hamster lung	30 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	DNA damage	Human lymphocyte	4.5 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
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Cytogenetic analysis	Hamster ovary	8 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Cobalt(II) chloride, hexahydrate (1 - 5%)	Mutation in mammalian somatic cells	Mouse mammary gland	0.002 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

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CAS#: 7791-13-1						Substances)
Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	DNA repair	Escherichia coli	0.025 mg/well	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 *in vivo* 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 If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	Mouse TD _{Lo}	7280 mg/kg	None reported	Effects on Fertility Paternal Effects Epididymis Male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females) Sperm duct Spermatogenesis (including genetic material, sperm morphology, motility, and count) testes	Vendor SDS

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route If available, see data below

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Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Rat TC _{Lo}	0.450 mg/L	1 hours	Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus) Specific Developmental Abnormalities Homeostasis	RTECS (Registry of Toxic Effects of Chemical Substances)

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

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	96 hours	<i>Gambusia affinis</i>	LC ₅₀	282 mg/L	IUCLID (The International Uniform Chemical Information Database)
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	96 hours	<i>Cyprinus carpio</i>	LC ₅₀	0.33 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Crustacea

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	48 Hours	None reported	LC ₅₀	240 mg/L	IUCLID (The International Uniform Chemical Information Database)
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	48 Hours	<i>Daphnia magna</i>	EC ₅₀	>= 1.1 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

Algae

If available, see ingredient data below

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Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Cobalt(II) chloride, hexahydrate (1 - 5%) CAS#: 7791-13-1	96 hours	<i>Chlorella vulgaris</i>	EC ₅₀	0.5 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

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
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	None reported	None reported	None reported	Readily biodegradable

Bioaccumulation

Does not have the potential to bioaccumulate according to GHS criteria. If available, see ingredient data below.

Product Bioaccumulation Data No data available.

Ingredient Bioaccumulation Data No data available

Additional information

Product Information

Partition Coefficient (n-octanol/water) Not applicable

Ingredient Information

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	log K _{ow} = 0.25	No information available

Mobility

Mobility in soil: High mobility. If available, see ingredient data below.

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Soil Organic Carbon-Water Partition Coefficient

Not applicable

Ingredient Information

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	$\log K_{oc} = 0.8$	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
Hydrochloric acid CAS#: 7647-01-0	Soluble	> 1000 mg/L	25 °C	77 °F
Cobalt(II) chloride, hexahydrate CAS#: 7791-13-1	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	Do not reuse container.
US EPA Waste Number	D002

Special instructions for disposal	Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.
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14. TRANSPORT INFORMATION

U.S. DOT

UN/ID no	UN1789
Proper shipping name	Hydrochloric Acid Solution
Hazard Class	8
Packing Group	III
Emergency Response Guide Number	157

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TDG

UN/ID no	UN1789
Proper shipping name	Hydrochloric Acid Solution
Hazard Class	8
Packing Group	III

IATA

UN/ID no	UN1789
Proper shipping name	Hydrochloric Acid Solution
Hazard Class	8
Packing Group	III
ERG Code	157

IMDG

UN/ID no	UN1789
Proper shipping name	Hydrochloric Acid Solution
Hazard Class	8
Packing Group	III
Marine pollutant	This material meets the definition of a marine pollutant

Note: No special precautions necessary.

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	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

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

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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 %
Hydrochloric acid (CAS #: 7647-01-0)	1.0
Cobalt(II) chloride, hexahydrate (CAS #: 7791-13-1)	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
Hydrochloric acid 7647-01-0	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)
Hydrochloric acid 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

Chemical Name	U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Release - Toxic (concentration >=37%); Release - Toxic (anhydrous); Theft - Weapons of Mass Effect (anhydrous)

U.S. - DEA (Drug Enforcement Administration) List I & List II

Chemical Name	U.S. - DEA (Drug Enforcement Administration) - List I or Precursor Chemicals	U.S. - DEA (Drug Enforcement Administration) - List II or Essential Chemicals
Hydrochloric acid (7 - 13%) CAS#: 7647-01-0	Not Listed	0.0 kg Domestic Sales Weight (listed under Anhydrous hydrogen chloride); 50 gallon Export Volume (exports, transshipments and international transactions to designated countries); 27 kg Export Weight (exports, transshipments and international transactions to designated countries, listed under Anhydrous hydrogen chloride)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

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U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Hydrochloric acid 7647-01-0	X	X	X
Cobalt(II) chloride, hexahydrate 7791-13-1	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

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

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical Name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thresholds
Cobalt(II) chloride, hexahydrate 7791-13-1	Declarable Substance (FI)	0.1 %

NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and Chemical Properties SKN*
HMIS	Health hazards - 3	Flammability - 0	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		

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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.

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End of Safety Data Sheet