

Liquid Color Standard - 9 through 18

SDS Preparation Date (mm/dd/yyyy): 01/13/2016

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Liquid Color Standard - 9 through 18**

Product Code(s) : CL-6609 through CL-6618

Recommended use of the chemical and restrictions on use

: Liquid colour standards for colorimeter.
No restrictions on use known.

Chemical family

: Article.
This article is a set of sealed glass tubes filled with various colored liquids.

Manufacturer's Telephone # : (800) 343-7721; (301) 483-6500

Name, address, and telephone number of the manufacturer:

BYK Gardner USA

9104 Guilford Road
Columbia, MD, USA
21046

Manufacturer's Telephone # : (800) 343-7721; (301) 483-6500

24 Hr. Emergency Tel # : CHEM-TEL: (800) 255-3924 (Within Continental U.S.); CHEM-TEL: +1 (813) 248-0585
(Outside U.S., please call collect).

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

OSHA Information: This product is considered an 'article' under 29 CFR Part 1910.1200.

WHMIS information: This product is considered to be a 'manufactured article'.

Appearance: This article is a set of sealed glass tubes filled with various colored liquids.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Under normal conditions of use, users of the product cannot be exposed to its harmful contents.

Label elements

Signal Word

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Hazard statement(s)

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Precautionary statement(s)

None required under OSHA HazCom2012 and 2015 Canadian WHMIS regulations.

Other hazards

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No OSHA defined hazard classes.

Other hazards which do not result in classification:

Note: This product is supplied in small quantities (10 ml or less), in sealed glass containers. When used as supplied, no exposure to this product is expected. However, if the article is damaged and/or improperly used:

Toxic fumes, gases or vapours may evolve on burning.

May be corrosive to metals. Contact with metals may release small amounts of flammable hydrogen gas.

Harmful if swallowed.

May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system.

May cause allergic respiratory reaction.

May cause allergic skin reaction.

May cause cancer.

Suspected of causing genetic defects.

May damage fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

Environmental precautions:

Toxic to aquatic life with long lasting effects. Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Article: This article is a set of sealed glass tubes filled with various colored liquids.

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Hydrogen chloride	Hydrochloride	7647-01-0	1.0 - 5.0
Water	Dihydrogen oxide	7732-18-5	Balance
Cobalt chloride (CoCl ₂)	Cobalt dichloride; Cobalt(II) chloride	7646-79-9	1.0 - 5.0
Ferric chloride	Iron trichloride	7705-08-0	3.0 - 36.0

*This article contains these materials but under normal conditions of use, it would not present a physical hazard or health risk to individuals.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : None required under normal conditions. However, if the article is damaged and/or improperly used:
If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE or doctor/physician. Never give anything by mouth if victim is unconscious. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Inhalation* : None required under normal conditions. However, if the article is damaged and/or improperly used:
If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. If experiencing respiratory symptoms call a poison center or doctor.
- Skin contact* : None required under normal conditions. However, if the article is damaged and/or improperly used:
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTRE or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

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Eye contact : None required under normal conditions. However, if the article is damaged and/or improperly used:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician.

Most important symptoms and effects, both acute and delayed

: This article is a set of sealed glass tubes filled with various colored liquids. Under normal conditions of use, users of the product cannot be exposed to its harmful contents. However, if the article is damaged and/or improperly used:
Harmful if swallowed. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include severe abdominal pain, vomiting, burns and bleeding. In severe cases, unconsciousness and coma may occur.
Causes skin burns. Symptoms may include redness, blistering, pain and swelling. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.
Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Could cause burns and permanent eye damage if not promptly removed.
May cause allergic respiratory reaction (sensitization) with asthmatic symptoms such as wheezing and chest tightness. Symptoms may be delayed.
May cause an allergic skin reaction (e.g. swelling, rash and eczema). Symptoms may be delayed.
Inhalation may cause respiratory tract burns. If mists are formed, may cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, choking and wheezing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
Suspected of causing genetic defects. Contains a substance which may damage genetic material.
May cause cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
May damage fertility or the unborn child. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Causes damage to organs through prolonged or repeated exposure. Prolonged overexposure to cobalt compounds may reduce thyroid functioning and cause kidney, heart and lung damage.

Indication of any immediate medical attention and special treatment needed

: Immediate medical attention is required. Corrosive liquid.
Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

: None known.

Special hazards arising from the substance or mixture / Conditions of flammability

: Not flammable under normal conditions of use.
Contact with metals may release small amounts of flammable hydrogen gas. Toxic fumes, gases or vapours may evolve on burning. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable under normal conditions of handling.

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Hazardous combustion products

: Hydrogen chloride gas. Chlorine. Iron oxides. Cobalt oxide. Toxic or corrosive gas.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Dike the spilled material, where this is possible. Neutralize with sodium bicarbonate or a mixture of soda ash/slaked lime. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ):
Hydrogen chloride. (5000 lbs / 2270 kg)
Ferric chloride (1000 lbs / 454 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Avoid breakage of sealed containers. However, if the article is damaged and/or material is released: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used. Once a person is sensitized, no further exposure to the material that caused the sensitization should be permitted.

Use only outdoors or in a well-ventilated area. Keep only in original container. In case of insufficient ventilation wear suitable respiratory equipment. Wear chemically resistant protective equipment during handling. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not breathe mist. Do not ingest. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
Keep away from metals and incompatibles. Keep away from extreme heat and flame. Empty containers retain residue.

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Conditions for safe storage : Store in a cool, dry, well ventilated area. Avoid breakage of sealed containers. Store in corrosive resistant container with a resistant inner liner. Store away from incompatible materials. Inspect periodically for damage or leaks. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

Incompatible materials : Metals. Strong oxidizing agents. Bases. Formaldehyde. Reducing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Hydrogen chloride	2 ppm (Ceiling)	N/Av	5 ppm; 7mg/m ³ (Ceiling)	N/Av
Water	N/Av	N/Av	N/Av	N/Av
Cobalt chloride (CoCl ₂)	0.02 mg/m ³ (Cobalt and inorganic compounds)(as 'Cobalt')	N/Av	0.1 mg/m ³ (as Co Metal, dust and fume)	N/Av
Ferric chloride	1 mg/m ³ (as Fe, iron salts, soluble)	N/Av	1 mg/m ³ (as Fe, iron salts, soluble)	N/Av

Note: This product is supplied in small quantities in sealed containers. When used as supplied, this product requires no special protective equipment. Exposure controls and personal protection information is provided for use in the event of breakage.

Exposure controls

Ventilation and engineering measures

: Use with adequate ventilation. Use corrosion-resistant ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

: If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers.

Skin protection

: None required when used as intended. However, if the article is damaged and/or material is released: Wear gloves impervious to this material. Advice should be sought from glove suppliers. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Eye / face protection

: None required when used as intended. However, if the article is damaged and/or material is released: Chemical splash goggles or face shield is recommended.

Other protective equipment

: An eyewash station should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe mist. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Contaminated work clothing must not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid, with color characteristic to colorimetric standards.

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Odour : None.
Odour threshold : N/Ap
pH : Variable - generally below 1.
Melting/Freezing point : <0°C / <32°F
Initial boiling point and boiling range
: >100°C / >212°F
Flash point : N/Ap
Flashpoint (Method) : N/Ap
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : N/Ap
Lower flammable limit (% by vol.)
: N/Ap
Upper flammable limit (% by vol.)
: N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive.
Vapour pressure : N/Av
Vapour density : >1 (Air = 1.0)
Relative density / Specific gravity
: N/Av
Solubility in water : Soluble
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Av
Auto-ignition temperature : N/Av
Decomposition temperature : N/Av
Viscosity : N/Av
Volatiles (% by weight) : N/Av
Volatile organic Compounds (VOC's)
: N/Av
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
May be corrosive to metals. Contact with metals may release small amounts of flammable hydrogen gas.

Chemical stability : Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions
: No dangerous reaction known under conditions of normal use.
Contact with metals may release small amounts of flammable hydrogen gas. Hazardous polymerization does not occur.

Conditions to avoid : Avoid breakage of sealed containers. Do not use in areas without adequate ventilation. Keep away from extreme heat and flame. Keep away from metals and incompatibles.

Incompatible materials : Metals. Strong oxidizing agents. Bases. Formaldehyde. Reducing agents.

Hazardous decomposition products
: None known. Refer also to hazardous combustion products, Section 5.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : If the article is damaged, hazardous properties may include the following:
Inhalation may cause respiratory tract burns. If mists are formed, may cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, choking and wheezing.
Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Sign and symptoms ingestion

- : If the article is damaged, hazardous properties may include the following:
Harmful if swallowed. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include severe abdominal pain, vomiting, burns and bleeding. In severe cases, unconsciousness and coma may occur.

Sign and symptoms skin

- : If the article is damaged, hazardous properties may include the following:
Causes skin burns. Symptoms may include redness, blistering, pain and swelling. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.

Sign and symptoms eyes

- : If the article is damaged, hazardous properties may include the following:
Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Could cause burns and permanent eye damage if not promptly removed.

Potential Chronic Health Effects

- : This article is a set of sealed glass tubes filled with clear, viscous liquid. Under normal conditions of use, users of the product cannot be exposed to its harmful contents. However, if the article is damaged and/or improperly used: Prolonged overexposure to cobalt compounds may reduce thyroid functioning and cause kidney, heart and lung damage.

Mutagenicity

- : If the article is damaged, hazardous properties may include the following:
Suspected of causing genetic defects. Contains a substance which may damage genetic material.

Contains: Cobalt dichloride

Soluble cobalt salts do not elicit any mutagenic activity either in bacterial or mammalian test systems. However they induce some genotoxic effects in vitro, mainly manifested as DNA strand or chromosome breaks.

Carcinogenicity

- : If the article is damaged, hazardous properties may include the following:
May cause cancer.

Contains: Cobalt dichloride

Animal experiments showed a statistically significant number of tumours. Cobalt is classified as possibly carcinogenic to humans by IARC (Group 2B) and the ACGIH (Category A3).

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Reproductive effects & Teratogenicity

- : If the article is damaged, hazardous properties may include the following:
May damage fertility or the unborn child. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Contains: Cobalt dichloride

Animal information have conclusively shown that this material causes harmful effects to male fertility. The effects on female fertility and development have not been fully studied.

Sensitization to material

- : If the article is damaged, hazardous properties may include the following:
May cause allergic respiratory reaction (sensitization) with asthmatic symptoms such as wheezing and chest tightness. Symptoms may be delayed.
May cause an allergic skin reaction (e.g. swelling, rash and eczema). Symptoms may be delayed.

Contains: Cobalt dichloride

Cobalt is a known skin and respiratory sensitizer, but the sensitization potential of the cobalt compound in this product is not fully known.

Specific target organ effects

- : None expected, when used as intended. If the article is damaged, hazardous properties may include the following:

Single Exposure: May cause respiratory irritation. Inhalation may cause respiratory tract burns. If mists are formed, may cause severe irritation to the nose, throat and respiratory tract.

Repeated Exposure: Causes damage to organs through prolonged or repeated exposure. Prolonged overexposure to cobalt compounds may reduce thyroid functioning and cause kidney, heart and lung damage.

Medical conditions aggravated by overexposure

- : Not likely, due to the form of this product.

Synergistic materials

- : Not available.

Toxicological data

- : This article is a set of sealed glass tubes filled with various colored liquids. Under normal conditions of use, users of the product cannot be exposed to its harmful contents.

Note: This product is supplied in small quantities (10 ml or less), in sealed glass containers. When used as supplied, no exposure to this product is expected.

There is no data available for this product. If the article is damaged, hazardous properties may include the following:

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Classification:

Acute toxicity, oral - Category 4 Harmful if swallowed.

The calculated ATE values for this mixture are:

ATE oral = 617-1423 mg/kg

ATE inhalation (mists) = 19.2-30 mg/L/4H

See below for individual ingredient acute toxicity data.

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<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Hydrogen chloride	1.05 1.175 mg/L (mist); 1405 ppm (gas)	238-277 mg/kg	>5010 mg/kg
Water	N/Av	>90 mL/kg	N/Av
Cobalt chloride (CoCl ₂)	N/Av	418mg/kg (anhydrous); 766mg/kg (cobalt (II) chloride hexahydrate)	>2000mg/kg (no deaths) (tricobalt tetraoxide)
Ferric chloride	N/Av	316 mg/kg	N/Av

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Toxic to aquatic life with long lasting effects. No data is available on the product itself. The product contains the following substances which are hazardous for the environment: Cobalt dichloride. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See below for individual ingredient ecotoxicity.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Hydrogen chloride	7647-01-0	4.92 mg/L (Cyprinus carpio) Toxicity is primarily associated with pH.	N/Av	N/Av
Water	7732-18-5	N/Av	N/Av	N/Av
Cobalt chloride (CoCl ₂)	7646-79-9	1512 µg/L (Rainbow trout)	0.21 mg/L (34 days) (cobalt (II) chloride hexahydrate (Fathead minnow))	None.
Ferric chloride	7705-08-0	20.3 mg/L (Bluegill sunfish)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Hydrogen chloride	7647-01-0	0.492 mg/L Daphnia magna (Water flea) Toxicity is primarily associated with pH.	N/Av	N/Av
Water	7732-18-5	N/Av	N/Av	N/Av
Cobalt chloride (CoCl ₂)	7646-79-9	5890 µg/L(Daphnia magna)	60.8 µg/Lcobalt (II) chloride hexahydrate (Daphnia magna)	1
Ferric chloride	7705-08-0	12.9 mg/L (Daphnia pulex (Water flea))	5.2 mg/L (Daphnia magna (Water flea))	None.

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Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Hydrogen chloride	7647-01-0	0.492 mg/L/72 hours (Green algae) Toxicity is primarily associated with pH.	N/Av	N/Av
Water	7732-18-5	N/Av	N/Av	N/Av
Cobalt chloride (CoCl ₂)	7646-79-9	144 µg/L(Green algae)	32.2 µg/L(Green algae)	1
Ferric chloride	7705-08-0	N/Av	N/Av	N/Av

Persistence and degradability

: No data is available on the product itself. Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: No data is available on the product itself. See the following data for ingredient information.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Hydrogen chloride (CAS 7647-01-0)	Log P(oct) =0.3 (36% Hydrochloric acid)	N/Av
Water (CAS 7732-18-5)	N/Av	N/Av
Cobalt chloride (CoCl ₂) (CAS 7646-79-9)	N/Av	N/Av
Ferric chloride (CAS 7705-08-0)	N/Av	N/Av

Mobility in soil

: No data is available on the product itself.

Other Adverse Environmental effects

: The ecological characteristics of this product have not been fully investigated.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7. Empty containers retain residue.


Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION


Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid, Ferric chloride)	8	II	
49CFR/DOT Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.154.				

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TDG	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Hydrochloric acid, Ferric chloride)	8	II	
TDG Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDG, refer to Section 1.17 for additional exemption requirements, if shipping under this exemption.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Hydrogen chloride	7647-01-0	Yes	5000 lbs / 2270 kg	500 lbs / 227 kg (gas only) (anhydrous only)	Yes	1%
Water	7732-18-5	Yes	N/Ap	N/Ap	No	N/Ap
Cobalt chloride (CoCl ₂)	7646-79-9	Yes	N/Ap	N/Ap	Yes	1% (as Cobalt compounds)
Ferric chloride	7705-08-0	Yes	(1000 lbs / 454 kg)	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard, Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Hydrogen chloride	7647-01-0	No	Not listed	Yes	Yes	Yes	Yes	Yes	Yes
Water	7732-18-5	No	Not listed	No	No	No	No	No	No
Cobalt chloride (CoCl ₂)	7646-79-9	Yes	Cancer (Metal powders)	No	No	Yes	No	No	No
Ferric chloride	7705-08-0	No	Not listed	Yes	Yes	No	Yes	Yes	No

Canadian Information:

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Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:

Hydrogen chloride: (Part 1, Group A Substance)

Cobalt (Cobalt compounds): (Part 1, Group A Substance)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>New Zealand IOC</u>
Hydrogen chloride	7647-01-0	231-595-7	Present	Present	(1)-215	KE-20189	Present	HSR004090
Water	7732-18-5	231-791-2	Present	Present	Not listed	KE-35400	Present	May be used as a single component chemical under an appropriate group standard
Cobalt chloride (CoCl ₂)	7646-79-9	231-589-4	Present	Present	(1)-207	KE-06095	Present	HSR003623
Ferric chloride	7705-08-0	231-729-4	Present	Present	(1)-213	KE-21134	Present	HSR004016

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- Co: Cobalt
- DOT: Department of Transportation
- EC50: Effective Concentration 50%.
- EINECS: European Inventory of Existing Commercial chemical Substances
- EPA: Environmental Protection Agency
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IECSC: Inventory of Existing Chemical Substances
- IMDG: International Maritime Dangerous Goods
- Inh: Inhalation
- KECL: Korean Existing Chemicals List
- KECI: Korean Existing Chemicals Inventory
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- MSHA: Mine Safety and Health Administration
- N/Av: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey

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NOEC: No observable effect concentration
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. International Agency for Research on Cancer Monographs, searched 2015.
- 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2015 (Chempendium, HSDB, RTECs).
- 4. Material Safety Data Sheet from manufacturer.
- 5. US EPA Title III List of Lists: March2015 Version
- 6. California Proposition 65 List: December4, 2015 Version
- 7. European Chemicals Agency, Classification Legislation, 2015
- 8. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2015.
- 9. Details of the supplier of the safety data sheet

Preparation Date (mm/dd/yyyy)

: 01/13/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: BYK Gardner USA 9104 Guilford Rd Columbia, MD, USA 21046 Telephone: (800) 343-7721; (301) 483-6500 Please direct all enquiries to BYK Gardner USA</p>	
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