

SAFETY DATA SHEET

According to 29 CFR 1910.1200 Hazard Communication Standard 2012 (HazCom 2012)

Revision: 09/16/2021

SECTION 1: Identification

Product identifier

Product name Slide Comparator, Orthophosphate (hi range), Stannous Chloride, 5-100 ppm

Product number

Recommended use and

restrictions

Use in accordance with manufacturer instruction for water analysis. This product contains sealed liquid chemicals that are hazardous if released. DO NOT USE apparatus if a chemical

leak is suspected. For professional use only.

Manufacturer Taylor Technologies, Inc.

31 Loveton Circle Sparks, MD 21152

Local: (410) 472-4340 - 8am - 5pm EST Toll-free: (800) 837-8548 - 8am - 5pm EST

Emergency phone number

CHEMTREC, United States 1-800-424-9300 - 24-hour service CHEMTREC, International +1 703-741-5970 - 24-hour service

SECTION 2: Hazard(s) Identification

Physical hazards Corrosive to metals Category 1 **Health hazards** Acute toxicity, oral Category 4 Eye damage/irritation Category 1 Skin corrosion/irritation Category 1B Sensitization, respiratory Category 1 Sensitization, skin Category 1 Carcinogenicity Category 1A Germ cell mutagenicity Category 2 Reproductive toxicity Category 1B

Specific target organ toxicity, repeated

exposure

Specific target organ toxicity, single exposure Category 3 (Respiratory tract)

Environmental hazards Acute (short-term) aquatic toxicity hazard

Category 1

Category 1

Chronic (long-term) aquatic toxicity hazard Category 1

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Harmful if swallowed. May be corrosive to metals. Causes severe skin burns and serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. 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. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective

gloves/protective clothing/eye protection/face protection if contact is likely to occur.

Contaminated work clothing must not be allowed out of the workplace. Keep only in original

container. Avoid release into the environment.

Response IF EXPOSED OR CONCERNED: Get medical advice/attention. IF IN EYES: Rinse cautiously

with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a physician or poison control center. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center if you feel unwell. IF ON SKIN (OR HAIR): Immediately take off all contaminated clothing. Rinse skin with plenty of water. Wash contaminated clothing before reuse. IF SKIN IRRITATION OR RASH OCCURS: Get medical advice/attention. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. IF EXPERIENCING RESPIRATORY SYMPTOMS: Call a physician or poison control center. Absorb spillage to prevent material damage. Collect

spillage.

Storage Store locked up. Store in corrosive-resistant container with corrosive-resistant inner liner. Keep

tightly capped. Store in a well-ventilated place. Store out of direct sunlight between 36°F-85°F.

Disposal Dispose of contents/container in accordance with local/regional/national/international

regulations.

Hazards not otherwise Not applicable

classified

SECTION 3: Composition/Information on Ingredients

Mixture			
Chemical name	Common name and synonyms	CAS number	% w/w
Water	Dihydrogen oxide	7732-18-5	70-100
Hydrochloric acid	Hydrogen chloride	7647-01-0	≤ 35
Cupric sulfate, pentahydrate	Copper(II) sulfate, pentahydrate	7758-99-8	≤ 13
Cobaltous chloride, hexahydrate	Cobalt(II) chloride, hexahydrate	7791-13-1	≤ 7
Sulfuric acid	Oil of vitriol; Sulphuric acid	7664-93-9	≤ 3
Nickel sulfate, hexahydrate	Nickel(II) sulfate, hexahydrate	10101-97-0	≤ 3

SECTION 4: First-Aid Measures

If inhaled

Remove individual to fresh air. Seek medical advice/attention if breathing becomes difficult or if respiratory irritation develops. Give oxygen or artificial respiration if needed.

In case of skin contact

Immediately flush skin with plenty of water for at least 20 minutes. If clothing comes in contact with the product, the clothing should be removed and laundered before reuse. Seek medical attention if irritation develops. Chemical burns must be treated by a physician. If eczema or rash develops, seek medical attention.

In case of eye contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

If swallowed

Call a physician or poison control center immediately. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Provide physician with a copy of this document.

Most important symptoms and effects, both acute and delayed

Direct skin or eye contact may cause corrosive burns. Symptoms may include pain, redness or swelling. Scarring or permanent damage, including blindness, could result. Skin contact may cause allergic skin reaction, dermatitis or rash. Inhalation may cause severe respiratory irritation, such as coughing and wheezing. Inhalation could result in pulmonary edema, symptoms—chest pain, shortness of breath—may be delayed. Inhalation may cause allergy or asthma symptoms or breathing difficulties. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus, and possibly the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, and bleeding. Encapsulated liquid contains chemical(s) suspected of causing genetic defects, cancer, or damage to fertility or the unborn child. DO NOT USE apparatus if chemical leak is suspected.

Refer to section 11 of the SDS for delayed and immediate effects and chronic effects from short- and long-term exposure. Refer to section 7 for precautions for safe handling.

Indication of any immediate medical attention and special treatment needed

Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep person under observation. Symptoms may be delayed.

General information

Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

SECTION 5: Firefighting Measures

Extinguishing media

 Unsuitable extinguishing Do not use a heavy water stream. Use of heavy stream of water may spread fire.

media

Specific hazards arising from the substance or mixture

Fire hazard Not flammable Explosion hazard Not explosive

Reactivity Hazardous reactions will not occur under normal conditions.

Hazardous combustion Cobalt oxides, copper oxides, nickel oxides, sulfur oxides. During fire, gases hazardous to

products health may be formed, including toxic hydrogen chloride gas.

Advice for firefighters

Precautionary measures Exercise caution when fighting any chemical fire; hazardous fumes will be present.

Firefighting Use water spray or fog for cooling exposed containers.

equipment/instructions
Protection during firefighting

Ose water spray or rog for cooling exposed containers.

Do not enter fire area without proper protective equipment, including respiratory protection.

Other information Refer to section 9 of the SDS for flammability properties.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not handle if pregnant or breastfeeding. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.

Environmental precautions

Avoid discharge into drains, watercourses, or onto the ground.

Methods and material for containment and cleaning up

Ventilate the area. Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recovery, flush area with water. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of large spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Reference to other sections

For exposure controls and personal protection, refer to section 8 of the SDS. For waste disposal, refer to section 13 of the SDS.

SECTION 7: Handling and Storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Inspect apparatus before each use. DO NOT USE if chemical leak is suspected. If a leak occurs, apparatus must be handled with protective gloves/protective clothing/eye protection/face protection for immediate disposal; refer to section 13.

Do not handle if pregnant or breastfeeding. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from incompatibles. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in corrosive-resistant container with corrosive-resistant inner liner. Keep tightly capped. Store in a well-ventilated place. Store out of direct sunlight between 36°F–85°F. Store away from incompatible materials (refer to section 10 of the SDS).

SECTION 8: Exposure Controls/Personal Protection

Occupational exposure limits

US ACGIH Threshold Limit Values

Components	Туре	Value
Cobaltous Chloride, hexahydrate (CAS 7791-13-1)	TWA	0.02 mg/m ³
Cupric sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m³
Hydrochloric acid (CAS 7647-01-0)	Ceiling	2 ppm (3 mg/m³)
Nickel sulfate, hexahydrate (10101-97-0)	TWA	0.1 mg/m³
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³
US NIOSH: Pocket Guide to Chemical Hazards		
Components	Туре	Value
Cupric chloride, dihydrate (CAS 10125-13-0)	TWA	1 mg/m³

Cupric sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m ³
Hydrochloric acid (CAS 7647-01-0)	Ceiling	5 ppm (7 mg/m ³)
Hydrochloric acid (CAS 7647-01-0)	IDLH	50 ppm (75 mg/m ³)
Nickel sulfate, hexahydrate (10101-97-0)	TWA	0.015 mg/m ³
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m ³
Sulfuric acid (CAS 7664-93-9)	IDLH	15 mg/m ³

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Туре	Value
Hydrochloric acid (CAS 7647-01-0)	Ceiling	5 ppm (7 mg/m³)
Nickel sulfate, hexahydrate (10101-97-0)	TWA	1 mg/m ³
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure controls

Appropriate engineering

controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eyewash facilities and emergency shower must be available when handling

this product.

Personal protective equipment

Eye/face protection Wear appropriate safety glasses with side shields (or goggles) if contact is likely to occur. Skin protection Wear appropriate chemical-resistant gloves and clothing if contact is likely to occur.

Body protection Wear appropriate protective clothing if contact is likely to occur

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA

approved respirator if there is a risk of exposure to dust/fumes at levels exceeding the

exposure limits. Advice should be sought from respiratory protection suppliers.

SECTION 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state Liquid, contained in sealed apparatus

Form Liquid

Color Clear, faint blue to dark blue

Odor No data available Odor threshold No data available

pН

No data available Evaporation rate Melting point/freezing point No data available No data available Initial boiling point (boiling

range)

Not applicable Flash point Auto-ignition temperature No data available Decomposition temperature No data available Flammability (solid, gas) No data available Upper Flammability Limit No data available Lower Flammability Limit No data available Vapor pressure No data available Vapor density No data available Relative density No data available Solubility Miscible with water Partition coefficient No data available

(n-octanol/water)

Viscosity No data available

SECTION 10: Stability and Reactivity

Encapsulated liquid may be corrosive to metals if released. Reactivity

Chemical stability Stable under recommended handling and storage conditions (refer to section 7 of the SDS).

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid Freezing temperatures—always store apparatus at room temperature, or at temperatures

> above 36°F. DO NOT USE apparatus if chemical leak is suspected. If a leak occurs, apparatus must be handled with protective gloves/protective clothing/eye protection/face protection and immediately disposed of in accordance with local/regional/national/international regulations.

Avoid contact with incompatible materials. Avoid release into the environment.

Incompatible materials Encapsulated liquid is incompatible with the following: Strong bases, strong oxidizing agents,

strong reducing agents, and metals.

Hazardous decomposition

products

Hydrogen chloride.

SECTION 11: Toxicological Information

Information on likely routes of exposure

Inhalation Avoid inhalation of this product. The contents of this apparatus may cause allergy or asthma

symptoms or breathing difficulties if inhaled.

Skin contact Protect exposed skin from contact. Always inspect apparatus for leaks before use. Chemical

burn and/or allergic skin reaction may occur if sealed liquid comes into contact with skin.

Eve contact Avoid close eye contact. Wear eye protection. Always inspect apparatus for leaks before use.

Wash skin thoroughly after handling to prevent accidental eye contact.

Ingestion Avoid accidental ingestion by observing good hygiene practices. Wash hands thoroughly after

handling this product.

Symptoms related to the physical, chemical, and toxicological characteristics Encapsulated liquid is highly corrisive and may be harmful if swallowed. Exposure may cause skin or eye damage. Liquid contains ingredients that may cause cancer, genetic defects, or damage to fertility or the unborn child. Exposure may cause allergy or asthma symptoms or breathing difficulties if inhaled. Liquid may cause allergic skin reaction. DO NOT USE

apparatus if chemical leak is suspected.

Refer to section 4 of the SDS for most important symptoms and effects.

Delayed and immediate effects and chronic effects from short- and long-term exposure

Acute toxicity This product is classified as an acute oral toxicity hazard. Acute toxicity estimate (ATE) for the

mixture has been calculated based on chapter 3 of GHS.

0% of the mixture consists of ingredient(s) with unknown acute oral toxicity.

Product acute toxicity estimate (ATE)

ATEmix (Oral) 800 mg/kg

ATEmix (Dermal) No data available ATEmix (Inhalation) No data available

Species Component(s) Acute toxicity data

Cobaltous chloride, hexahydrate (CAS 7791-13-1)

LD50 (Oral) Rat 418 mg/kg (source: vendor)

LD50 (Dermal) Not applicable No data available LC50 (Inhalation) Not applicable No data available

Cupric sulfate, pentahydrate (CAS 7758-99-8)

LD50 (Oral) Rat 300 mg/kg (source: vendor)

LD50 (Dermal) Not applicable No data available LC50 (Inhalation) Not applicable No data available

Hydrochloric acid (CAS 7647-01-0)

LD50 (Oral) Rat 630 mg/kg (source: vendor)

LD50 (Dermal) Rabbit >2000 mg/kg LC50 (Inhalation) Not applicable No data available Nickel sulfate, hexahydrate (CAS 10101-97-0)

LD50 (Oral) Rat 362 mg/kg (source: NIOSH)

LD50 (Dermal) Not applicable No data available

LC50 (Inhalation) Not applicable No data available

Sulfuric acid (CAS 7664-93-9)

LD50 (Oral) Rat 2140 mg/kg (source: NIOSH)

LD50 (Dermal) Not applicable No data available

LC50 (Inhalation) Not applicable 0.375 mg/L, 4 hr (source: vendor)

Skin corrosion/irritationCauses severe skin burns.Serious eye damage/eyeCauses serious eye damage.

irritation

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitizationMay cause an allergic skin reaction.Germ cell mutagenicitySuspected of causing genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cobaltous chloride, hexahydrate; 2B - Group 2B: Possibly carcinogenic to humans.

Hydrochloric acid; Group 3: Not classifiable as to carcinogenicity to humans.

Nickel sulfate, hexahydrate; Group 1: Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)

Not regulated

US National Toxicology Program (NTP) Report on Carcinogens

Nickel sulfate, hexahydrate; Known to be human carcinogen.

Strong inorganic mists containing sulfuric acid; Known to be human carcinogens.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity

(single exposure)

May cause respiratory irritation.

Specific target organ toxicity

(repeated exposure)

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard No data available

SECTION 12: Ecological Information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Cobaltous chloride, hexahydrate (CAS 7791-13-1)

EC50 Crustacea (Water flea) 1.11 mg/L, 48 hours

LC50 Fish (Rainbow trout) 0.569 – 3.474 mg/L, 96 hours

Cupric sulfate, pentahydrate (CAS 7758-99-8)

EC50 Crustacea (Water flea) 0.0058 – 0.0073 mg/L, 48 hours

LC50 Fish (Bluegill) 0.66 – 1.15 mg/L, 96 hours

Nickel sulfate, hexahydrate (CAS 10101-97-0)

EC50 Crustacea (Rotifer) 7.1 mg/L, 48 hours

LC50 Fish (Carp) 5.79 – 6.54 mg/L, 96 hours

Persistence and degradabilityNo data availableBioaccumulative potentialNo data availableMobility in soilNo data available

Other adverse effects Large or frequent spills can have a harmful or damaging effect on the environment.

SECTION 13: Disposal Considerations

Collect and reclaim or dispose of in sealed containers at a licensed waste disposal site. Since emptied containers may retain product residue, follow label warnings even after container is emptied. This material and its container must be disposed of in a safe manner. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport Information

DOT

UN number 1789

UN Proper shipping name Hydrochloric acid solution **Reportable Quantity** 5000 lbs, Hydrochloric acid

Class (Subsidiary risk) 8 Label(s) **Packing group** Ш

Special provisions 386, A3, B3, B15, B133, IB2, N41, T8, TP2

154 Packaging exceptions Packaging, non-bulk 202

IATA

UN number 1789

UN Proper shipping name Hydrochloric acid solution

Class (Subsidiary risk) **Packing group** Ш

Special provisions A3, A803

IMDG

UN number 1789

UN Proper shipping name Hydrochloric acid solution

Class (Subsidiary risk) 8 **Packing group** Ш

Environmental hazards

Marine pollutant Yes **Special provisions** None **EmS** F-A, S-B

Special precautions for user

Read safety instructions, SDS, and emergency procedures before handling.

This substance/mixture is not intended to be transported in bulk.

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

the IBC Code

DOT hazard pictograms

IATA/IMDG hazard pictograms

SECTION 15: Regulatory Information

US federal regulations

CERCLA Hazardous Substance (40 CFR 302.4)

Chemical name	CAS number	Reportable Quantity	
Cobaltous chloride, hexahydrate	7791-13-1	Not applicable	
Cupric sulfate, pentahydrate	7758-99-8	10 lbs	
Hydrochloric acid	7647-01-0	5000 lbs	
Nickel sulfate, hexahydrate	10101-97-0	100 lbs	
Sulfuric acid	7664-93-9	1000 lbs	

SARA 302 Extremely Hazardous Substance (40 CFR 355 Appendices A / B)

Not regulated

SARA 304 Emergency Release Notification

Not regulated

SARA 311/312 Hazardous Chemical

Yes

SARA 313 (TRI reporting)

Chemical name	CAS number
Cobaltous chloride, hexahydrate	7791-13-1
Cupric sulfate, pentahydrate	7758-99-8
Nickel sulfate, hexahydrate	10101-97-0

TSCA Section 8(b) Chemical Inventory

All components are on the U.S. EPA TSCA Inventory list.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs)

Chemical name	CAS number	
Cobaltous chloride, hexahydrate	7791-13-1	
Nickel sulfate, hexahydrate	10101-97-0	

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated

Clean Water Act, Toxic and Priority Pollutants (40 CFR 401.15 and CFR 423, Appendix A)

Chemical name	CAS number
Cupric sulfate, pentahydrate	7758-99-8
Nickel sulfate, hexahydrate	10101-97-0
Safe Drinking Water Act (SDWA)	
Chemical name	CAS number
Cobaltous chloride, hexahydrate	7791-13-1
Cupric sulfate, pentahydrate	7758-99-8

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (California Proposition 65)

WARNING: This product can exposure you to Nickel sulfate, hexahydrate, which is known to the State of California to cause cancer. For more information go to www.P65warnings.ca.gov.

Massachusetts Right-to-Know Act

Chemical name	CAS number
Cupric sulfate, pentahydrate	7758-99-8
Hydrochloric acid	7647-01-0
Nickel sulfate, hexahydrate	10101-97-0
Sulfuric acid	7664-93-9

New Jersey Worker and Community Right-to-Know Act

CAS number
7791-13-1
7758-99-8
7647-01-0
10101-97-0
7664-93-9

Pennsylvania Worker and Community Right-to-Know Act

Chemical name	CAS number	
Cupric chloride, dihydrate	10125-13-0	
Hydrochloric acid	7647-01-0	

Sulfuric acid 7664-93-9

Rhode Island Right-to-Know Act

Chemical name CAS number

Hydrochloric acid 7647-01-0
Nickel sulfate, hexahydrate 10101-97-0
Sulfuric acid 7664-93-9

SECTION 16: Other Information

NFPA Rating

Health hazard 3
Fire hazard 0
Reactivity 1
Specific N/A

Disclaimer

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