



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name CAN Solution

Product number R-0820; R-0820-PL

Recommended use and restrictions

Manufacturer

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

Corrosive to metals Category 1

Health hazards

Acute toxicity, inhalation Category 4

Eye damage/irritation Category 1

Skin corrosion/irritation Category 1B

Specific target organ toxicity, single exposure Category 3 Respiratory tract irritation

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

May be corrosive to metals. Harmful if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation.

Precautionary statements

Prevention Keep only in original container. Do not breathe dusts or mists. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur.

Response

Absorb spillage to prevent material damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. 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.

Storage

Store in corrosive-resistant container with a corrosive-resistant inner liner. Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store in a well-ventilated place. Store locked up.

Disposal

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	75-85
Ammonium cerium (IV) nitrate	Ceric ammonium nitrate	16774-21-3	5-10
Sulfuric acid	Hydrogen sulfate	7664-93-9	5-10

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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 unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

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

Suitable extinguishing media Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Specific hazards arising from the substance or mixture

Fire hazard Not flammable
Explosion hazard Not explosive
Reactivity May be corrosive to metals
Hazardous combustion products Cerium oxides, nitrogen oxides, and sulfur oxides

Advice for firefighters

Precautionary measures Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.
Protection during firefighting 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. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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. Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for reuse. Dilute acid with water and neutralize with dilute base. If not recoverable, dilute with water or flush to holding area and neutralize. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

Personal precautions, protective equipment, and emergency procedures

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic function

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m ³	Not applicable

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

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m ³	Not applicable

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 chemical safety 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.
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
Form	Liquid
Color	Orange
Odor	Pungent
Odor threshold	No data available
pH	0.5
Evaporation rate	No data available
Melting point	No data available

Freezing point	No data available
Boiling point	212–215°F (100–101.7°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	May be corrosive to metals
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Metal compounds, nitromethane, organic materials, oxidizing agents, powdered metals, strong reducing agents, and sugars

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	Harmful if inhaled. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns
Eye contact	Causes serious eye damage
Ingestion	Causes digestive tract burns
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring.</p> <p>Direct contact with concentrated solutions may be corrosive to the eyes and may cause severe damage, including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause severe respiratory irritation. Symptoms may include coughing, choking, and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.</p> <p>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, bleeding.</p>
Acute toxicity	Harmful if inhaled. See below for acute toxicity estimate (ATE) and individual ingredient acute toxicity data.

Mixture	Species	Test Results
CAN Solution (CAS Mixture)		
Acute		
<i>Inhalation</i>		
LC ₅₀	Rat	2.56 mg/L, 4 hours (mist)
Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
<i>Dermal</i>		
LC ₅₀	Rat	510 mg/m ³ , 2 hours

Oral		
LD ₅₀	Rat	2140 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	May cause respiratory irritation	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	A3, A7, B15, IB2, N6, N34, T8, TP2, TP12
Packaging exceptions	154
Packaging, non-bulk	202
Packaging, bulk	242

IATA

UN number	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

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

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



SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance (40 CFR 302.4)

Sulfuric acid (CAS 7664-93-9)

SARA 302 Extremely Hazardous Substance

Sulfuric acid (CAS 7664-93-9)

SARA 304 Emergency Release Notification

Sulfuric acid (CAS 7664-93-9)

SARA 313 (TRI Reporting)

Sulfuric acid (CAS 7664-93-9)

U.S. state regulations

Massachusetts Right-to-Know Act

Sulfuric acid (CAS 7664-93-9)

New Jersey Worker and Community Right-to-Know Act

Ammonium cerium (IV) nitrate (CAS 16774-21-3)

Sulfuric acid (CAS 7664-93-9)

Pennsylvania Worker and Community Right-to-Know Act

Ammonium cerium (IV) nitrate (CAS 16774-21-3)

Sulfuric acid (CAS 7664-93-9)

Rhode Island Right-to-Know Act

Sulfuric acid (CAS 7664-93-9)

SECTION 16: Other information

NFPA Rating

Health hazard	3
Fire hazard	0
Reactivity	2
Specific	N/A

Disclaimer

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Issue date:

May 2015

Last revisions

July 2016

SECTION 1: Identification**Product identifier**

Product name Chromate Indicator

Product number R-0630; R-0630-PL

Recommended use and restrictions

Manufacturer Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification**Physical hazards**

No data available

Health hazards

Carcinogenicity Category 1

Eye damage/irritation Category 2A

Germ cell mutagenicity Category 1

Skin corrosion/irritation Category 2

Specific target organ toxicity, single exposure Category 3 Respiratory tract irritation

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

May cause cancer. May cause genetic defects. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Precautionary statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist or vapor. Use only outdoors or in a well-ventilated area. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur.

Response

IF EXPOSED OR CONCERNED: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. IF SKIN IRRITATION OCCURS: Get medical advice/attention. Take off all contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician or poison control center if you feel unwell.

Storage

Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	90–99
Potassium chromate	Not available	7789-00-6	0.1–10

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Immediately call a physician or poison control center. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	No data available

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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. 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 spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Potassium chromate (CAS 7789-00-6)	TWA	0.05 mg/m ³	Not applicable

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Potassium chromate (CAS 7789-00-6)	TWA	0.002 mg/m ³	Not applicable

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

Components	Type	Value	Form
Potassium chromate (CAS 7789-00-6)	Ceiling	0.1 mg/m ³	Not applicable

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 chemical safety 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.
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
Form	Liquid
Color	Light yellow
Odor	Odorless
Odor threshold	No data available
pH	9.1
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available

Boiling point	212–215°F (100–101.67°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.64
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Organic materials, powdered metals, strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	Causes skin irritation
Eye contact	Causes serious eye irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause serious irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p> <p>Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.</p> <p>Possible germ cell hazard. May cause heritable genetic damage, based on animal data.</p> <p>Possible cancer hazard. May cause cancer, based on animal data.</p>
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Potassium chromate (CAS 7789-00-6)		
Acute		
Oral		
LD ₅₀	Mouse	180 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	May cause genetic defects	
Carcinogenicity	May cause cancer	
IARC Monographs Overall Evaluation of Carcinogenicity		
Potassium chromate (CAS 7789-00-6)	1 Carcinogenic to humans	
National Toxicology Program (NTP) Report on Carcinogens		
Potassium chromate (CAS 7789-00-6)	Known to be human carcinogen	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)

Potassium chromate Cancer
(CAS 7789-00-6)

Reproductive toxicity	No data available
Specific target organ toxicity (single exposure)	No data available
Specific target organ toxicity (repeated exposure)	No data available
Aspiration hazard	No data available

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, N.O.S. (Potassium chromate)
Transport hazard class(es)	
Class	9
Subsidiary risk	Not listed
Label(s)	9
Packing group	III
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	8, 146, 335, IB3, T4, TP1, TP29
Packaging exceptions	155
Packaging, non-bulk	203
Packaging, bulk	241

IATA

UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, N.O.S. (Potassium chromate)
Transport hazard class(es)	
Class	9
Subsidiary risk	Not listed
Packing group	III
Environmental hazards	Yes
ERG code	9L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, N.O.S. (Potassium chromate)
Transport hazard class(es)	
Class	9
Subsidiary risk	Not listed
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-F
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.



Marine pollutant

SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Potassium chromate (7789-00-6) (Listed February 27, 1987)

California Proposition 65 - CRT: Listed date/Developmental toxin

Potassium chromate (7789-00-6) (Listed December 19, 2008)

California Proposition 65 - CRT: Listed date/Female reproductive toxin

Potassium chromate (7789-00-6) (Listed December 19, 2008)

California Proposition 65 - CRT: Listed date/Male reproductive toxin

Potassium chromate (7789-00-6) (Listed December 19, 2008)

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

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

CERCLA Hazardous Substance (40 CFR 302.4)

Potassium chromate (CAS 7789-00-6)

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

Potassium chromate (CAS 7789-00-6)

SARA 313 (TRI Reporting)

Potassium chromate (CAS 7789-00-6)

U.S. state regulations

Massachusetts Right-to-Know Act

Potassium chromate (CAS 7789-00-6)

New Jersey Worker and Community Right-to-Know Act

Potassium chromate (CAS 7789-00-6)

Pennsylvania Worker and Community Right-to-Know Act

Potassium chromate (CAS 7789-00-6)

SECTION 16: Other information

NFPA Rating

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

Disclaimer

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Issue date:

May 2015

Last revisions

August 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Ferroin Indicator
Product number R-0819; R-0819-PL

Recommended use and restrictions

Manufacturer Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

No data available

Environmental hazards

No data available

Label elements

Hazard pictograms No data available
Signal word No data available
Hazard statements No data available
Precautionary statements
 Prevention No data available
 Response No data available
 Storage Keep tightly capped. Store out of direct sunlight between 36°F–85°F.
 Disposal No data available

Hazards not otherwise classified

Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	95–99
1,10-Phenanthroline monohydrate	o-Phenanthrolinemonohydrate	5144-89-8	0.1–5

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Carbon oxides and nitrogen oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewer, basements, or confined areas. Following product recover, 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 a 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**Personal precautions, protective equipment, and emergency procedures**

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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**

No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.
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
Form	Liquid
Color	Dark red
Odor	Odorless
Odor threshold	No data available
pH	3.2
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Acids and strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p>

Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Acute toxicity
This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
1,10-Phenanthroline monohydrate (CAS 5144-89-8)		
Acute		
<i>Oral</i>		
LD ₅₀	Rat	132 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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Issue date:

May 2015

Last revision

June 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Hardness Buffer
Product number R-0619; R-0619B; R-0619LB; R-0619B-PL

Recommended use and restrictions

Manufacturer Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

Acute toxicity, oral Category 4

Eye damage/irritation Category 1

Skin corrosion/irritation Category 1

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Causes severe skin burns and eye damage. Harmful if swallowed.

Precautionary statements

Prevention

Do not breathe dusts or mists. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Do not eat, drink, or smoke when using this product.

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center if you feel unwell. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. 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.

Storage

Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store locked up.

Disposal

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	65–75
Ammonium hydroxide	Not available	1336-21-6	20–30
Ammonium chloride	Salmiac	12125-02-9	5–15

Other components below reportable levels

<1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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 unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Hydrogen chloride gas, magnesium oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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 mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewer, 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 a 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

Personal precautions, protective equipment, and emergency procedures

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. Store out of direct sunlight between 36°F–85°F. Store locked up. Store away from incompatible materials (refer to section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m ³	Not applicable
	TWA	10 mg/m ³	Not applicable
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm	Not applicable
	TWA	25 ppm	Not applicable

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m ³	Not applicable
	TWA	10 mg/m ³	Not applicable
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm	Not applicable
		27 mg/m ³	Not applicable
	TWA	25 ppm	Not applicable
		18 mg/m ³	Not applicable

Biological limit values

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 chemical safety 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.
- 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
Form	Liquid
Color	Clear, colorless to yellow
Odor	Sulfidic/ammonical
Odor threshold	No data available
pH	10.6
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	120–140°F (48.9–60°C)
Flash point	LEL 16% as NH ₃ ; UEL 27% as NH ₃
Auto-ignition temperature	No data available
Decomposition temperature	No data available

Flammability (solid, gas)	No data available
Vapor pressure	143 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Copper, iron, strong acids, strong bases, strong oxidizing agents, zinc

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	Causes severe skin burns
Eye contact	Causes serious eye damage
Ingestion	Harmful if swallowed
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring.</p> <p>Direct eye contact may cause serious damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause severe respiratory irritation. Symptoms may include coughing, choking, and wheezing.</p> <p>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, bleeding.</p>
Acute toxicity	Harmful if swallowed. See below for acute toxicity estimate (ATE) and individual ingredient acute toxicity data.

Product	Species	Test Results
Hardness Buffer (CAS Mixture)		
Acute		
Oral		
LD ₅₀	Rat	1360.54 mg/kg

Components	Species	Test Results
Ammonium chloride (CAS 12125-02-9)		
Acute		
Oral		
LD ₅₀	Rat	1650 mg/kg

Ammonium hydroxide (CAS 1336-21-6)		
Acute		
Oral		
LD ₅₀	Rat	350 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	

Specific target organ toxicity (single exposure) No data available

Specific target organ toxicity (repeated exposure) No data available

Aspiration hazard No data available

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN2672
UN proper shipping name	Ammonia solution
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Label(s)	8
Packing group	III
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	IB3, IP8, T7, TP1
Packaging exceptions	154
Packaging, non-bulk	203
Packaging, bulk	241

IATA

UN number	UN2672
UN proper shipping name	Ammonia solution
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	III
Environmental hazards	Yes
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	852
Cargo aircraft only	856

IMDG

UN number	UN2672
UN proper shipping name	Ammonia solution
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

Transport in bulk according to

Annex II of MARPOL 73/78

and the IBC Code

DOT





Marine pollutant



SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. state regulations

Massachusetts Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)
Ammonium hydroxide (CAS 1336-21-6)

New Jersey Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)
Ammonium hydroxide (CAS 1336-21-6)

Pennsylvania Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)
Ammonium hydroxide (CAS 1336-21-6)

SECTION 16: Other information

NFPA Rating

Health hazard	3
Fire hazard	1
Reactivity	2
Specific	N/A

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Issue date:

May 2015

Last revisions

August 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name: Fluoride Masking Agent
Product number: R-0805; R-0805-PL

Recommended use and restrictions

Manufacturer: Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

Health hazards

Carcinogenicity: Category 1A
Sensitization, skin: Category 1
Specific target organ toxicity, repeat exposure: Category 1

Environmental hazards

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements: May cause cancer. May cause allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Do not breathe dust/fumes/gas/mists/vapors/spray. Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product.

Response

IF EXPOSED OR CONCERNED: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. IF SKIN IRRITATION OR RASH OCCURS: Get medical advice/attention. Wash contaminated clothing before reuse. Get medical advice/attention if you feel unwell.

Storage

Store out of direct sunlight between 36°F–85°F. Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal

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

Hazards not otherwise classified

Not applicable

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	% w/w
Water	Dihydrogen oxide	7732-18-5	80–100
Beryllium sulfate tetrahydrate	Beryllium sulphate tetrahydrate	7787-56-6	1–5

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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

Immediately call a physician or poison control center. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Beryllium oxides, sulfur oxides. Other irritating fumes and smoke.

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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 mists or vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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. Stop leak if it can be done without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material where this is possible. Absorb spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

Personal precautions, protective equipment, and emergency procedures

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

mists or vapors. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Store out of direct sunlight between 36°F–85°F. Store locked up. Store in a well-ventilated place. Keep container tightly closed. 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	Type	Value
Beryllium sulfate tetrahydrate (CAS 7787-56-6)	TWA	0.00005 mg/m ³ (skin)

US NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Beryllium sulfate tetrahydrate (CAS 7787-56-6)	Ceiling	0.0005 mg/m ³

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

Components	Type	Value
Beryllium sulfate tetrahydrate (CAS 7787-56-6)	TWA	2 µg/m ³
Beryllium sulfate tetrahydrate (CAS 7787-56-6)	Ceiling	5 µg/m ³
Beryllium sulfate tetrahydrate (CAS 7787-56-6)	Peak (30 min of an 8-hour shift)	25 µg/m ³

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 chemical safety 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
Form	Liquid
Color	Clear, colorless
Odor	Odorless
Odor threshold	Not applicable
pH	2.8
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Specific gravity	No data available

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
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No hazardous decomposition products under normal use

SECTION 11: Toxicological information

Information on toxicological effects

Likely routes of exposure are skin/eye contact and ingestion.	
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause serious irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p> <p>Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.</p> <p>May cause cancer.</p>
Acute toxicity	This product is not classified as an acute toxicity hazard.
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory sensitization	No data available
Skin sensitization	May cause allergic skin reaction
Germ cell mutagenicity	No data available
Carcinogenicity	

IARC Monographs. Overall Evaluation of Carcinogenicity

Beryllium and Beryllium Compounds, Group 1; Carcinogenic to humans

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)

Beryllium and Beryllium Compounds; Cancer

US National Toxicology Program (NTP) Report on Carcinogens

Beryllium and Beryllium Compounds; Known to be a human carcinogen

Reproductive toxicity	No data available
Specific target organ toxicity (single exposure)	No data available
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	This product is not classified as environmentally hazardous.
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No 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	1566
UN Proper shipping name	Beryllium compounds, n.o.s.
Reportable Quantity	10 lbs, Beryllium
Class (Subsidiary risk)	6.1
Label(s)	6.1
Packing group	III
Special provisions	IB8, IP3, T1, TP33
Packaging exceptions	153
Packaging, non-bulk	213

IATA

UN number	1566
UN Proper shipping name	Beryllium compounds, n.o.s.
Class (Subsidiary risk)	6.1
Packing group	III
Special provisions	None

IMDG

UN number	1566
UN Proper shipping name	Beryllium compounds, n.o.s.
Class (Subsidiary risk)	6.1
Packing group	III
Environmental hazards	
Marine pollutant	No
Special provisions	223, 274
EmS	F-A, S-A
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.

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
Beryllium sulfate tetrahydrate	7787-56-6	10 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

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

SARA 313 (TRI reporting)

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

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(b) Hazardous Air Pollutants (HAPs)

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

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
Beryllium sulfate tetrahydrate	7787-56-6

Safe Drinking Water Act (SDWA)

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

US state regulations

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

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

WARNING: This product can expose you to Beryllium sulfate tetrahydrate (beryllium compound), 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
Beryllium sulfate tetrahydrate	7787-56-6

New Jersey Worker and Community Right-to-Know Act

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

Pennsylvania Worker and Community Right-to-Know Act

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

Rhode Island Right-to-Know Act

Chemical name	CAS number
Beryllium sulfate tetrahydrate	7787-56-6

SECTION 16: Other information

NFPA Rating

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

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Issue date:

May 2015

Last revisions

March 2018



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name: Hardness Indicator Powder
Product number: R-0620; R-0620B; R-0620LB; R-0620B-PL

Recommended use and restrictions

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Manufacturer

Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards	No data available
Health hazards	No data available
Environmental hazards	No data available
Label elements	
Hazard pictograms	No data available
Signal word	No data available
Hazard statements	No data available
Precautionary statements	
Prevention	No data available
Response	No data available
Storage	Keep tightly capped. Store out of direct sunlight between 36°F–85°F.
Disposal	No data available
Hazards not otherwise classified	Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Sucrose	Sugar	57-50-1	>99
Other components below reportable levels			<1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	No data available

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Sweep up or vacuum up spillage and collect in suitable container for later disposal. Never return spills to original containers for reuse. In the event of a 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**Personal precautions, protective equipment, and emergency procedures**

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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****ACGIH Threshold Limit Values**

Components	Type	Value	Form
Sucrose (CAS 57-50-1)	TWA	10 mg/m ³	Not applicable

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

Components	Type	Value	Form
Sucrose (CAS 57-50-1)	PEL	15 mg/m ³ 5 mg/m ³	Total dust Respirable fraction

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

Skin protection

Body protection

Respiratory protection

Wear appropriate chemical safety goggles if contact is likely to occur.

Wear appropriate chemical-resistant gloves and clothing if contact is likely to occur.

Wear appropriate protective clothing.

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	Solid
Form	Powder
Color	Purple
Odor	Odorless
Odor threshold	No data available
pH	No data available
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	No data available
Relative vapor density	No data available
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity**Reactivity**

Hazardous reactions will not occur under normal conditions.

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

Contact with incompatible materials. Do not use in areas without adequate ventilation.

Incompatible materials

Nitric acid, oxidizers, and sulfuric acid

SECTION 11: Toxicological information**Information on toxicological effects**

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea

Most important symptoms/effects, acute and delayed	Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Inhalation of dust can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Sucrose (CAS 57-50-1)		
Acute		
Oral		
LD ₅₀	Rat	29700 mg/kg
Acute toxicity	No data available	
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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Issue date:

May 2015

Last revisions

May 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Hardness Reagent

Product number R-0683; R-0683-PL

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

No data available

Environmental hazards

No data available

Label elements

Hazard pictograms No data available

Signal word No data available

Hazard statements No data available

Precautionary statements No data available

Prevention No data available

Response No data available

Storage Keep tightly capped. Store out of direct sunlight between 36°F–85°F.

Disposal No data available

Hazards not otherwise classified

Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	95–99
Ethylenediaminetetraacetic acid EDTA		60-00-4	0.1–5
Other components below reportable levels			0.01–0.1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Hydrogen chloride gas and magnesium oxide

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recover, 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 a 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**Personal precautions, protective equipment, and emergency procedures**

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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**

No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.
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
Form	Liquid
Color	Clear, colorless or nearly colorless
Odor	Odorless
Odor threshold	No data available
pH	8.1
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Acids, metals, and strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p>

Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Acute toxicity
This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Ethylenediaminetetraacetic acid (CAS 60-00-4)		
Acute		
<i>Oral</i>		
LD ₅₀	Rat	4500 mg/kg
Acute toxicity	No data available	
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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Issue date:

April 2015

Last revision

June 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Methyl Orange Indicator

Product number R-0637; R-0637-PL

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

No data available

Environmental hazards

No data available

Label elements

Hazard pictograms

No data available

Signal word

No data available

Hazard statements

No data available

Precautionary statements

No data available

Prevention

No data available

Response

No data available

Storage

Keep tightly capped. Store out of direct sunlight between 36°F–85°F.

Disposal

No data available

Hazards not otherwise classified

Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	>99
Other components below reportable levels			<1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Carbon oxides, nitrogen oxides, sodium oxides, and sulfur oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recover, 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 a 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**Personal precautions, protective equipment, and emergency procedures**

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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**

No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.
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
Form	Liquid
Color	Clear, orange
Odor	No data available
Odor threshold	No data available
pH	8.5
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.

Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Acute toxicity	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity (single exposure)	No data available
Specific target organ toxicity (repeated exposure)	No data available
Aspiration hazard	No data available

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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Issue date:

April 2015

Last revision

June 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Long Range Indicator

Product number R-1003U; R-1003U-PL

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

Flammable liquids Category 2

Health hazards

Eye damage/irritation Category 2A

Specific target organ toxicity, single exposure Category 3 Narcotic effects

Specific target organ toxicity, single exposure Category 3 Respiratory tract irritation

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Highly flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements

Prevention

Keep away from heat/sparks/open flames. -No smoking. Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Wash skin thoroughly after handling. Avoid breathing mist or vapors. Use only outdoors or in a well-ventilated area.

Response

IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician or poison control center if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention. IN CASE OF FIRE: Use alcohol-resistant foam, carbon dioxide, dry chemical powder, or water fog to extinguish.

Storage

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

Disposal

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Isopropanol	Isopropyl alcohol	67-63-0	70-80
Water	Dihydrogen oxide	7732-18-5	20-30
Other components below reportable levels			0.01-0.1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media Alcohol-resistant foam, carbon dioxide, dry chemical powder, or water fog

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

Specific hazards arising from the substance or mixture

Fire hazard Flammable liquid and vapor. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can be electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential static discharge, use proper bonding and grounding procedures. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors are heavier than air and may spread along floors.

Explosion hazard Vapors may form explosive mixtures with air. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors are heavier than air and may spread along floors.

Reactivity Hazardous reactions will not occur under normal conditions.

Hazardous combustion products Carbon oxides

Advice for firefighters

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

Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.

Protection during firefighting 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. 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 contaminated area. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

Vapors may form explosive mixtures with air. Keep away from sources of ignition. NO SMOKING. Do not handle, store, or open near an open flame, sources of heat or sources of ignition. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	400 ppm	Not applicable
	TWA	200 ppm	Not applicable

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m ³	Not applicable
		500 ppm	Not applicable
	TWA	980 mg/m ³	Not applicable
		400 ppm	Not applicable

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

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	PEL	980 mg/m ³ 400 ppm	Not applicable Not applicable

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropanol (CAS 67-63-0)	40 mg/L	Acetone	Urine	Not available

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 chemical safety 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.
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
Form	Liquid
Color	Dark green
Odor	Alcohol
Odor threshold	No data available
pH	No data available
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	190°F (87.8°C)
Flash point	66°F (18.9°C) Closed cup; LEL 3.3%; UEL 18.9%
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Flammable
Vapor pressure	33 mm Hg
Relative vapor density	2
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Heat, sparks, open flames, and other ignition sources. Temperatures exceeding the flash point. Direct sunlight. Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Alkali metals, aluminum, oxidizing agents, potassium t-butoxide, some plastics, and strong acids

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause respiratory irritation. May cause drowsiness or dizziness.
Skin contact	May cause slight or mild transient irritation
Eye contact	Causes serious eye irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness, and other central nervous system problems.</p>

Ingestion may cause gastrointestinal irritation, nausea, vomiting, diarrhea, as well as depression of the central nervous system.

Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.		
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Components	Species	Test Results	
Isopropanol (CAS 67-63-0)			
Acute			
<i>Dermal</i>			
LD ₅₀	Rabbit	12890 mg/kg	
<i>Inhalation</i>			
LC ₅₀	Rat	17000 ppm, 4 hours (vapor)	
<i>Oral</i>			
LD ₅₀	Rat	4720 mg/kg	
Respiratory or skin sensitization	No data available		
Germ cell mutagenicity	No data available		
Carcinogenicity	No data available		
Reproductive toxicity	No data available		
Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness. May cause respiratory irritation.		
Specific target organ toxicity (repeated exposure)	No data available		
Aspiration hazard	No data available		

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging, non-bulk	202
Packaging, bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**DOT****IATA; IMDG****SECTION 15: Regulatory information****U.S. federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance (40 CFR 302.4)

Isopropanol (CAS 67-63-0)

SARA 313 (TRI reporting)

Isopropanol (CAS 67-63-0)

U.S. state regulations**Massachusetts Right-to-Know Act**

Isopropanol (CAS 67-63-0)

New Jersey Worker and Community Right-to-Know Act

Isopropanol (CAS 67-63-0)

Pennsylvania Worker and Community Right-to-Know Act

Isopropanol (CAS 67-63-0)

Rhode Island Right-to-Know Act

Isopropanol (CAS 67-63-0)

SECTION 16: Other information**NFPA Rating**

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

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Issue date:

May 2015

Last revisions

May 2016

SECTION 1: Identification**Product identifier**

Product name

Phenolphthalein Indicator

Product number

R-0638; R-0638-PL; R-0638BR; R-0638BR-PL; R-0638G; R-0638G-PL; R-0638O; R-0638O-PL; R-0638W

Recommended use and restrictions**Manufacturer**

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification**Physical hazards**

Flammable liquids Category 2

Health hazards

Carcinogenicity Category 1B

Eye damage/irritation Category 2A

Germ cell mutagenicity Category 2

Specific target organ toxicity, single exposure Category 3 narcotic effects

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Highly flammable liquid and vapor. May cause cancer. Causes serious eye irritation. Suspected of causing genetic defects. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames. -No smoking. Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Wash skin thoroughly after handling. Avoid breathing mist or vapors. Use only outdoors or in a well-ventilated area.

Response

IF EXPOSED OR CONCERNED: Get medical advice/attention. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician or poison control center if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention. IN CASE OF FIRE: Use alcohol-resistant foam, carbon dioxide, dry chemical, or water fog to extinguish.

Storage

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

Disposal

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture	Chemical name	Common name and synonyms	CAS number	%
	Water	Dihydrogen oxide	7732-18-5	50-60
	Isopropanol	Isopropyl alcohol	67-63-0	40-50
	Phenolphthalein	3,3-Bis(4-hydroxyphenyl)phthalide	77-09-8	0.1-1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media Alcohol-resistant foam, carbon dioxide, dry chemical powder, or water fog

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

Specific hazards arising from the substance or mixture

Fire hazard Flammable liquid and vapor. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can be electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential static discharge, use proper bonding and grounding procedures. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors are heavier than air and may spread along floors.

Explosion hazard Vapors may form explosive mixtures with air. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors are heavier than air and may spread along floors.

Reactivity Hazardous reactions will not occur under normal conditions.

Hazardous combustion products Carbon oxides

Advice for firefighters

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

Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.

Protection during firefighting 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. 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 contaminated area. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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. Vapors may form explosive mixtures with air. Keep away from sources of ignition. NO SMOKING. Do not handle, store, or open near an open flame, sources of heat or sources of ignition. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	400 ppm	Not applicable
	TWA	200 ppm	Not applicable

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m ³	Not applicable
	TWA	500 ppm	Not applicable
		980 mg/m ³	Not applicable
		400 ppm	Not applicable

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

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	PEL	980 mg/m ³ 400 ppm	Not applicable Not applicable

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropanol (CAS 67-63-0)	40 mg/L	Acetone	Urine	Not available

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 chemical safety 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.
- 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

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Form	Liquid
Color	Clear, colorless
Odor	Alcohol
Odor threshold	No data available
pH	No data available
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	180°F (82.22°C)
Flash point	62°F (16.7°C) Closed cup; LEL 2%; UEL 12%
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	25 mm Hg
Relative vapor density	1.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Heat, sparks, open flames, and other ignition sources. Temperatures exceeding the flash point. Direct sunlight. Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Combustible materials and reducing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause respiratory irritation. May cause drowsiness or dizziness.
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause serious irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness, and other central nervous system problems.</p> <p>Ingestion may cause gastrointestinal irritation, nausea, vomiting, diarrhea, as well as depression of the central nervous system.</p> <p>Possible germ cell hazard. May cause heritable genetic damage, based on animal data.</p> <p>Possible cancer hazard. May cause cancer, based on animal data.</p>

Acute toxicity This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Isopropanol (CAS 67-63-0)		
Acute		
<i>Dermal</i>		
LD ₅₀	Rabbit	12890 mg/kg
<i>Inhalation</i>		
LC ₅₀	Rat	17000 ppm, 4 hours (vapor)
<i>Oral</i>		
LD ₅₀	Rat	4720 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	May cause genetic defects	
Carcinogenicity	May cause cancer	
IARC Monographs: Overall Evaluation of Carcinogenicity		
Phenolphthalein (CAS 77-09-8)	2B possibly carcinogenic to humans	
National Toxicology Program (NTP) Report on Carcinogens		
Phenolphthalein (CAS 77-09-8)	Reasonably anticipated to be a human carcinogen	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness. May cause respiratory irritation.	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging, non-bulk	202
Packaging, bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed
IMDG	
UN number	UN1993
UN proper shipping name	Flammable liquids, N.O.S. (Isopropanol)
Transport hazard class(es)	
Class	3
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

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

DOT



IATA; IMDG



SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance (40 CFR 302.4)

Isopropanol (CAS 67-63-0)

SARA 313 (TRI reporting)

Isopropanol (CAS 67-63-0)

Phenolphthalein (CAS 77-09-8)

U.S. state regulations

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Phenolphthalein (Listed May 15, 1998)

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

WARNING: This product contains a chemical known to the State of California to cause cancer.

Massachusetts Right-to-Know Act

Isopropanol (CAS 67-63-0)

New Jersey Worker and Community Right-to-Know Act

Isopropanol (CAS 67-63-0)

Phenolphthalein (CAS 77-09-8)

Pennsylvania Worker and Community Right-to-Know Act

Isopropanol (CAS 67-63-0)

Phenolphthalein (CAS 77-09-8)

Rhode Island Right-to-Know Act

Isopropanol (CAS 67-63-0)

Phenolphthalein (CAS 77-09-8)

SECTION 16: Other information

NFPA Rating

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

Disclaimer

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Issue date:

May 2015

Last revisions

May 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Sulfuric Acid N
Product number R-0686; R-0686O; R-0686O-PL; R-0686P; R-0686P-PL

Recommended use and restrictions

Manufacturer Taylor Technologies, Inc.
31 Loveton Circle
Sparks, MD 21152
Phone: (410) 472-4340
Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards Corrosive to metals Category 1

Health hazards Eye damage/irritation Category 1
Skin corrosion/irritation Category 1B

Environmental hazards No data available

Label elements

Hazard pictograms



Signal word Danger
Hazard statements May be corrosive to metals. Causes severe skin burns and eye damage.

Precautionary statements

Prevention Keep only in original container. Do not breathe dusts or mists. Wash skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur.

Response Absorb spillage to prevent material damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a physician or poison control center. 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.

Storage Store in corrosive-resistant container with a corrosive-resistant inner liner. Keep tightly capped.
Store out of direct sunlight between 36°F–85°F. Store locked up.

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

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	95–99
Sulfuric acid	Hydrogen sulfate	7664-93-9	0.1–5

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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 unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

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**

Suitable extinguishing media Use extinguishing media appropriate for surrounding fire.

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

Specific hazards arising from the substance or mixture

Fire hazard Not flammable

Explosion hazard Not explosive

Reactivity May be corrosive to metals

Hazardous combustion products Sulfur oxides

Advice for firefighters

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

Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.

Protection during firefighting 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. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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. Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for reuse. Dilute acid with water and neutralize with dilute base. If not recoverable, dilute with water or flush to holding area and neutralize. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

Personal precautions, protective equipment, and emergency procedures

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic function

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m ³	Not applicable

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

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m ³	Not applicable

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 chemical safety 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.
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
Form	Liquid
Color	Clear, colorless or nearly colorless
Odor	Odorless
Odor threshold	No data available
pH	0.6
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	230°F (110°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions

Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	May be corrosive to metals
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Metal compounds, nitromethane, oxidizing agents, sugars

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	Causes severe skin burns
Eye contact	Causes serious eye damage
Ingestion	Causes digestive tract burns
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause corrosive skin burns, deep ulcerations, and possibly permanent scarring.</p> <p>Direct contact with concentrated solutions may be corrosive to the eyes and may cause severe damage, including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause severe respiratory irritation. Symptoms may include coughing, choking, and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.</p> <p>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, bleeding.</p>
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
<i>Inhalation</i>		
LC ₅₀	Rat	510 mg/m ³ , 2 hours
<i>Oral</i>		
LD ₅₀	Rat	2140 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	A3, A7, B15, IB2, N6, N34, T8, TP2, TP12
Packaging exceptions	154
Packaging, non-bulk	202
Packaging, bulk	242

IATA

UN number	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	8L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN2796
UN proper shipping name	Sulphuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

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

DOT



IATA; IMDG



SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance (40 CFR 302.4)

Sulfuric acid (CAS 7664-93-9)

SARA 302 Extremely Hazardous Substance

Sulfuric acid (CAS 7664-93-9)

SARA 304 Emergency Release Notification

Sulfuric acid (CAS 7664-93-9)

SARA 313 (TRI Reporting)

Sulfuric acid (CAS 7664-93-9)

U.S. state regulations**Massachusetts Right-to-Know Act**

Sulfuric acid (CAS 7664-93-9)

New Jersey Worker and Community Right-to-Know Act

Sulfuric acid (CAS 7664-93-9)

Pennsylvania Worker and Community Right-to-Know Act

Sulfuric acid (CAS 7664-93-9)

Rhode Island Right-to-Know Act

Sulfuric acid (CAS 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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Issue date:

May 2015

Last revisions

July 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Phosphonate Titrating Solution

Product number R-0803; R-0803-PL

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

Eye damage/irritation Category 2B

Skin corrosion/irritation Category 2

Specific target organ toxicity, repeated exposure Category 2

Specific target organ toxicity, single exposure Category 3 Respiratory tract irritation

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Warning

Hazard statements

Causes eye irritation. Causes skin irritation. May cause respiratory irritation. May cause damage to liver, kidneys, lungs, and bone marrow through prolonged or repeated exposure.

Precautionary statements

Prevention Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur. Do not breathe mist or vapors. Use only outdoors or in a well-ventilated area.

Response

Get medical advice/attention if you feel unwell. IF ON SKIN: Wash with plenty of water. IF SKIN IRRITATION OCCURS: Get medical advice/attention. Take off all contaminated clothing and wash it before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician or poison control center if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention.

Storage

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

Disposal

No data available

Hazards not otherwise classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	>99
Thorium nitrate hydrate	Thorium tetrannitrate hydrate	13823-29-5	<1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

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 unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Metal oxides and nitrogen oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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. 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 spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

Occupational exposure limits No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.

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
Form	Liquid
Color	Clear, colorless
Odor	Odorless
Odor threshold	No data available
pH	3.1
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available

Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Specific activity	0.000000508 µCi/g

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause respiratory irritation
Skin contact	Causes skin irritation
Eye contact	Causes eye irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p> <p>Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.</p> <p>Prolonged or repeated overexposure may cause damage to liver, kidneys, lungs, and bone marrow.</p>
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Thorium nitrate hydrate (CAS 13823-29-5)		
Acute		
Oral		
LD ₅₀	Rat	1760 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	Although elemental thorium and thorium nitrate are not classified as carcinogens, both materials are mildly radioactive. Prolonged exposure may be associated with an increased risk of cancer. Not classifiable as a carcinogenic unless material is intended to be intravenously injected	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	May cause respiratory irritation	
Specific target organ toxicity (repeated exposure)	May cause damage to liver, kidneys, lungs, and bone marrow through prolonged or repeated exposure	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA 313 (TRI Reporting)

Thorium nitrate hydrate (CAS 13823-29-5)

U.S. state regulations

Massachusetts Right-to-Know Act

Thorium nitrate hydrate (CAS 13823-29-5)

New Jersey Worker and Community Right-to-Know Act

Thorium nitrate hydrate (CAS 13823-29-5)

Pennsylvania Worker and Community Right-to-Know Act

Thorium nitrate hydrate (CAS 13823-29-5)

Rhode Island Right-to-Know Act

Thorium nitrate hydrate (CAS 13823-29-5)

SECTION 16: Other information

NFPA Rating

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

Disclaimer

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Issue date:

May 2015

Last revisions

August 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Silver Nitrate Reagent

Product number R-0807

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

Oxidizing liquids

Category 2

Health hazards

No data available

Environmental hazards

No data available

Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

May intensify fire; oxidizer.

Precautionary statements

Prevention Keep away from heat. Keep/store away from clothing, combustible material, and organics. Take any precaution to avoid mixing with combustibles and organics. Wear protective gloves/protective clothing/eye protection/face protection if contact is likely to occur.

Response IN CASE OF FIRE: Use carbon dioxide, dry chemical powder, foam, or water fog to extinguish.

Storage Keep tightly capped. 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 classified

No data available

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	95-99
Silver nitrate	Not available	7761-88-8	0.1-5

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Specific hazards arising from the substance or mixture

Fire hazard May intensify fire; oxidizer.
Explosion hazard Not explosive
Reactivity Hazardous reactions will not occur under normal conditions.
Hazardous combustion products Nitrogen oxides

Advice for firefighters

Precautionary measures Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions Use water spray or fog for cooling exposed containers.
Protection during firefighting 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. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. 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 to remove residual contamination. Never return spills to original containers for reuse. Contaminated absorbent material may pose the same hazards as the spilled product. In the event of a 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**

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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****ACGIH Threshold Limit Values**

Components	Type	Value	Form
Silver nitrate (CAS 7761-88-8)	TWA	0.01 mg/m ³	as Ag

NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Silver nitrate (CAS 7761-88-8)	TWA	0.01 mg/m ³	Dust as Ag

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

Components	Type	Value	Form
Silver nitrate (CAS 7761-88-8)	PEL	0.01 mg/m ³	as Ag

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 chemical safety 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.
- 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
Form	Liquid
Color	Clear, colorless
Odor	Odorless
Odor threshold	No data available
pH	No data available
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Combustible material and organics

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Silver nitrate (CAS 7761-88-8)		
Acute		
Oral		
LD ₅₀	Rat	1173 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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	UN3139
UN proper shipping name	Oxidizing liquid, N.O.S. (Silver nitrate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	Not listed
Label(s)	5.1
Packing group	II
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	62, 127, A2, IB2
Packaging exceptions	152
Packaging, non-bulk	202
Packaging, bulk	242

IATA

UN number	UN3139
UN proper shipping name	Oxidizing liquid, N.O.S. (Silver nitrate)

Transport hazard class(es)	
Class	5.1
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	Not listed
ERG code	5L
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN3139
UN proper shipping name	Oxidizing liquid, N.O.S. (Silver nitrate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	Not listed
Packing group	II
Environmental hazards	
Marine pollutant	Not listed
EmS	F-A, S-Q
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.

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

DOT



IATA; IMDG

SECTION 15: Regulatory information

U.S. federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance (40 CFR 302.4)

Silver nitrate (CAS 7761-88-8)

U.S. state regulations

Massachusetts Right-to-Know Act

Silver nitrate (CAS 7761-88-8)

New Jersey Worker and Community Right-to-Know Act

Silver nitrate (CAS 7761-88-8)

Pennsylvania Worker and Community Right-to-Know Act

Silver nitrate (CAS 7761-88-8)

Rhode Island Right-to-Know Act

Silver nitrate (CAS 7761-88-8)

SECTION 16: Other information

NFPA Rating

Health hazard	1
Fire hazard	0
Reactivity	0
Specific	OX

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Issue date:

May 2015

Last revisions

May 2016



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier

Product name Thiosulfate N/10

Product number R-0697; R-0697-PL

Recommended use and restrictions

Manufacturer

To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.

Taylor Technologies, Inc.

31 Loveton Circle

Sparks, MD 21152

Phone: (410) 472-4340

Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards

No data available

Health hazards

No data available

Environmental hazards

No data available

Label elements

Hazard pictograms

No data available

Signal word

No data available

Hazard statements

No data available

Precautionary statements

Prevention

No data available

Response

No data available

Storage

Keep tightly capped. Store out of direct sunlight between 36°F–85°F.

Disposal

No data available

Hazards not otherwise classified

Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Water	Dihydrogen oxide	7732-18-5	95–99
Sodium thiosulfate	Thiosulfuric acid, disodium salt, pentahydrate	10102-17-7	0.1–5
Other components below reportable levels			0.01–0.1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Carbon oxides, hydrogen sulfide, and sulfur oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Following product recover, 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 a 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**Personal precautions, protective equipment, and emergency procedures**

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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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**

No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.
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
Form	Liquid
Color	Clear, colorless or nearly colorless
Odor	Odorless
Odor threshold	No data available
pH	9.6
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	212°F (100°C)
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	17 mm Hg
Relative vapor density	0.6
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Oxidizing agents and strong acids

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	<p>Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.</p> <p>Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.</p> <p>Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties.</p>

Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Acute toxicity
This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Sodium thiosulfate (CAS 10102-17-7)		
Acute		
Oral		
LD ₅₀	Rat	>5000 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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Issue date:

May 2015

Last revisions

February 2017



SAFETY DATA SHEET

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

SECTION 1: Identification

Product identifier	
Product name	XO Indicator Powder
Product number	R-0802P; R-0802P-PL
Recommended use and restrictions	To be used in accordance with manufacturer instructions or under the direct guidance of the manufacturer.
Manufacturer	Taylor Technologies, Inc. 31 Loveton Circle Sparks, MD 21152 Phone: (410) 472-4340 Emergency phone: (800) 837-8548

SECTION 2: Hazard(s) identification

Physical hazards	No data available
Health hazards	No data available
Environmental hazards	No data available
Label elements	
Hazard pictograms	No data available
Signal word	No data available
Hazard statements	No data available
Precautionary statements	
Prevention	No data available
Response	No data available
Storage	Keep tightly capped. Store out of direct sunlight between 36°F–85°F.
Disposal	No data available
Hazards not otherwise classified	Avoid contact with skin, eyes, or clothing. For contact with skin or eyes, flush 20 minutes with water. If ingested, contact physician or local poison control center. Treat symptoms as needed.

SECTION 3: Composition/information on ingredients

Mixture			
Chemical name	Common name and synonyms	CAS number	%
Potassium chloride	Not available	7447-40-7	>99
Other components below reportable levels			<1

SECTION 4: First-aid measures

If inhaled

Remove individual to fresh air. Seek medical 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.

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. If symptoms persist or in all cases of concern, seek medical advice.

If swallowed

Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs. If symptoms persist or in all cases of concern, seek medical advice.

Most important symptoms and effects, both acute and delayed

Refer to section 2 and/or section 11 of the SDS for the most important known symptoms and effects.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

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

SECTION 5: Firefighting measures**Extinguishing media**

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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 products	Carbon oxides, hydrogen chloride gas, potassium oxides, sodium oxides, and sulfur oxides

Advice for firefighters

Precautionary measures	Exercise caution when fighting any chemical fire; hazardous fumes will be present.
Firefighting equipment/instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	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**

Wear appropriate protective equipment and clothing during cleanup. 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

Sweep up or vacuum up spillage and collect in suitable container for later disposal. Never return spills to original containers for reuse. In the event of a 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**Personal precautions, protective equipment, and emergency procedures**

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. 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. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Keep tightly capped. 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**

No occupational exposure limits noted for the ingredient(s)

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 chemical safety 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.

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	Solid
Form	Crystalline
Color	Grayish-purple
Odor	Odorless
Odor threshold	No data available
pH	No data available
Evaporation rate	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	No data available
Relative vapor density	No data available
Solubility	Soluble in all proportions
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

SECTION 10: Stability and reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
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	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong oxidizing agents

SECTION 11: Toxicological information

Information on toxicological effects

Inhalation	May cause irritation to the respiratory system
Skin contact	May cause slight or mild transient irritation
Eye contact	May cause slight or mild transient irritation
Ingestion	May cause irritation, nausea, vomiting, and diarrhea
Most important symptoms/effects, acute and delayed	Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Inhalation of dust can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Potassium chloride (CAS 7447-40-7)		
Acute		
<i>Oral</i>		
LD ₅₀	Mouse	1500 mg/kg
LD ₅₀	Rat	2600 mg/kg
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity	No data available	
Reproductive toxicity	No data available	
Specific target organ toxicity (single exposure)	No data available	
Specific target organ toxicity (repeated exposure)	No data available	
Aspiration hazard	No data available	

SECTION 12: Ecological information

This product is not classified as environmentally hazardous; however, this does not exclude the possibility that 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

No data available

SECTION 15: Regulatory information

No data available

SECTION 16: Other information

NFPA Rating

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

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