

SAFETY DATA SHEET

Issuing Date No data available

Revision Date 14-Oct-2014

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sodium Carbonate

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Only under proper supervision and according to the directions and precautions provided in the corresponding science educational set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos
Supplier Address 301 Friendship Street
 Providence
 RI
 02903
 US
Supplier Phone Number Phone:401-459-6787
 Fax:401-459-6775
 Contact Phone1-800-587-2872
Supplier Email products@thamesandkosmos.com
Emergency telephone number (US Poison Control)1-800-222-1222

2. HAZARDS IDENTIFICATION


Classification

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

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2



GHS Label elements, including precautionary statements**Emergency Overview**

Signal word	Warning		
Hazard Statements	Harmful if inhaled Causes serious eye irritation		
			
Appearance	White	Physical State	Solid/Powder Solid
			Odor Odorless

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response**Eyes**

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

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Sodium carbonate	497-19-8	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance.

Eye Contact

If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately. If not breathing, give artificial respiration. Do not breathe dust.

Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe dust.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Uniform Fire Code

Irritant: Solid
Highly Toxic: Solid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust.

Other Information

Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental Precautions

Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Do not breathe dust. Avoid generation of dust. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection If splashes are likely to occur. Wear safety glasses with side shields (or goggles). None required for consumer use.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Do not breathe dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Solid/Powder Solid	Odor	Odorless
Appearance	White	Odor Threshold	No information available
Color	No information available		



<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	2g/100ml	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Excessive heat.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).
Eye Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. May cause redness, itching, and pain. May cause temporary eye irritation.
Skin Contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium carbonate 497-19-8	= 4090 mg/kg (Rat)	-	= 2300 mg/m ³ (Rat) 2 h

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes. Coughing and/ or wheezing.

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

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	No known effect based on information supplied.
Target Organ Effects	Eyes. Respiratory system.
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
 4,090.00 mg/kg
ATEmix (inhalation-dust/mist)
 1.15 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Sodium carbonate 497-19-8	120h EC50: = 242 mg/L (Nitzschia)	96h LC50: = 300 mg/L (Lepomis macrochirus) 96h LC50: 310 - 1220 mg/L (Pimephales promelas)		48h EC50: = 265 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Sodium carbonate 497-19-8	Corrosive

14. TRANSPORT INFORMATION

<u>DOT</u>	NOT REGULATED
Proper Shipping Name	NON REGULATED
Hazard Class	N/A



<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u>	Not regulated
Proper Shipping Name	NON REGULATED
Hazard Class	N/A
<u>IMDG/IMO</u>	Not regulated
Hazard Class	N/A
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

CERCLA

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

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.



U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

International Regulations

Canada

WHMIS Hazard Class

D2B - Toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards	3	Flammability	0	Instability	0	Physical and Chemical Hazards - Personal Protection
HMIS	Health Hazards	3	Flammability	0	Physical Hazard	0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 14-Oct-2014

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date No data available

Revision Date 24-Sep-2014

Revision Number 1



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Potassium Hexacyanoferrate (II)

Other means of identification

Synonyms Potassium Ferrocyanide, (Yellow) Prussiate of Potash

Recommended use of the chemical and restrictions on use

Recommended Use Use only with proper supervision and according to directions and precautions provided in the corresponding science education set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos

Supplier Address 301 Friendship Street
Providence
RI
02903
US

Supplier Phone Number Phone:401-459-6787
Fax:401-459-6775
Contact Phone1-800-587-2872

Supplier Email products@thamesandkosmos.com

Emergency telephone number (US Poison Control) 1-800-222-1222

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).



GHS Label elements, including precautionary statements**Emergency Overview**

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Light yellow **Physical state** Solid/Powder Solid **Odor** Odorless

Precautionary Statements - Prevention

Obtain special instructions before use

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed
Harmful to aquatic life with long lasting effects
May cause slight eye irritation

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Potassium ferrocyanide	14459-95-1	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES**First aid measures**

Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin contact	Wash with soap and water.
Inhalation	Remove to fresh air.
Ingestion	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

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

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium ferrocyanide 14459-95-1	TWA: 1 mg/m ³ Fe	TWA: 5 mg/m ³ CN (vacated) TWA: 1 mg/m ³ Fe (vacated) TWA: 5 mg/m ³ S*	IDLH: 25 mg/m ³ CN TWA: 1 mg/m ³ Fe

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems



Individual protection measures, such as personal protective equipment

Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and Chemical Properties**

Physical state	Solid/Powder, Solid	Odor	Odorless
Appearance	Light yellow	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	3g/100ml	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Potassium ferrocyanide 14459-95-1	= 3613 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms No information available.

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

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.

STOT - repeated exposure	No information available.
Chronic Toxicity	No known effect based on information supplied.
Target Organ Effects	Eyes. Gastrointestinal tract (GI). Liver. Respiratory system. Skin.
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

3,613.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Disposal methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

NOT REGULATED

NON REGULATED



Hazard Class	N/A
<u>TDG</u> Marine Pollutant	Not regulated This product contains a chemical which is listed as a marine pollutant according to TDG.
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u> Proper Shipping Name Hazard Class	Not regulated NON REGULATED N/A
<u>IMDG/IMO</u> Hazard Class Marine Pollutant	Not regulated N/A This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO Product is a marine pollutant according to the criteria set by IMDG/IMO
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

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

US Federal Regulations

SARA 313

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

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Potassium ferrocyanide - 14459-95-1	14459-95-1	60 - 100	1.0

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Potassium ferrocyanide		X		



14459-95-1				
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CERCLA

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

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Potassium ferrocyanide 14459-95-1			X	X	X

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Potassium ferrocyanide 14459-95-1 (60 - 100)		Mexico: TWA 1 mg/m ³ Mexico: TWA 5 mg/m ³ Mexico: STEL 2 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 24-Sep-2014

Revision Note No information available

Disclaimer

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End of Safety Data Sheet





SAFETY DATA SHEET

Issuing Date No data available

Revision Date 14-Oct-2014

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Ammonium Iron(III) Sulfate

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Only under proper supervision and according to the directions and precautions provided in the corresponding science educational set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos
Supplier Address 301 Friendship Street
Providence

RI
02903
US
Supplier Phone Number Phone:401-459-6787
Fax:401-459-6775

Supplier Email products@thamesandkosmos.com
Emergency telephone number (US Poison Control)1-800-222-1222

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Emergency Overview



The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Violet

Physical State Solid

Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May cause slight eye irritation

PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Ferric ammonium sulfate	10138-04-2	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.



Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

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

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Avoid contact with eyes.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ferric ammonium sulfate 10138-04-2	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Solid	Odor	Odorless
Appearance	Violet	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
-----------------	---------------	------------------------



pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Slightly soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Product does not present an acute toxicity hazard based on known or supplied information.



Inhalation	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component Information**Information on toxicological effects**

Symptoms No information available.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity May cause adverse liver effects.

Target Organ Effects Eyes. Gastrointestinal tract (GI). Liver. Respiratory system. Skin.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT
 Proper Shipping Name
 Hazard Class

NOT REGULATED
 NON REGULATED
 N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA
 Proper Shipping Name
 Hazard Class

Not regulated
 NON REGULATED
 N/A

IMDG/IMO
 Hazard Class

Not regulated
 N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA
 DSL

Complies
 All components are listed either on the DSL or NDSL.

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

US Federal Regulations

SARA 313

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



Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ferric ammonium sulfate - 10138-04-2	10138-04-2	60 - 100	1.0

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

CERCLA

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

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Ferric ammonium sulfate 10138-04-2			X	X	

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Ferric ammonium sulfate 10138-04-2 (60 - 100)		Mexico: TWA 1 mg/m ³ Mexico: STEL 2 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
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Latham, NY 12110
1-800-572-6501

Revision Date 14-Oct-2014



Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

SAFETY DATA SHEET

Issuing Date No data available

Revision Date 14-Oct-2014

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Copper (II) Sulfate

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Only under proper supervision and according to the directions and precautions provided in the corresponding science educational set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos
Supplier Address 301 Friendship Street
Providence
RI
02903
US
Supplier Phone Number Phone:401-459-6787
Fax:401-459-6775
Contact Phone1-800-587-2872
Supplier Email products@thamesandkosmos.com
Emergency telephone number (US Poison Control)1-800-222-1222

2. HAZARDS IDENTIFICATION

Classification

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


Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 2



Serious eye damage/eye irritation

Category 2

GHS Label elements, including precautionary statements**Emergency Overview**

Signal word	Danger		
Hazard Statements	Harmful if swallowed Toxic in contact with skin Causes skin irritation Causes serious eye irritation		
			
Appearance	Blue	Physical State	Granular Solid
			Odor Odorless

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Specific measures (see .? on this label)
 Specific treatment (see supplemental first aid instructions on this label)

Eyes

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

Skin

IF ON SKIN: Wash with plenty of soap and water
 Call a POISON CENTER or doctor/physician if you feel unwell
 Remove/Take off immediately all contaminated clothing
 Wash contaminated clothing before reuse
 If skin irritation occurs: Get medical advice/attention

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Seek immediate medical attention/advice.

Skin Contact

Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning sensation.

Indication of any immediate medical attention and special treatment needed



Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical, CO₂, water spray or regular foam. Dike fire-control water for later disposal.

Unsuitable extinguishing media

Do not use halogenated extinguishing agents or foam. Do not scatter spilled material with high pressure water streams.

Specific Hazards Arising from the Chemical

Some may burn but none ignite readily. Some may be transported hot.

Uniform Fire Code Irritant: Solid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Do not touch or walk through spilled material. Stop leak if you can do it without risk.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up with sand, earth or other non-combustible absorbent material. With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

Incompatible Products Strong acids. Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	TWA: 1 mg/m ³ Cu dust and mist	-	IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection If splashes are likely to occur: Wear safety glasses with side shields (or goggles). None required for consumer use.

Skin and Body Protection Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves. Chemical resistant apron.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. No information available. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State Appearance Color	Granular Solid Blue No information available	Odor Odor Threshold	Odorless No information available
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Property	Values	Remarks/ Method
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Soluble in water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point VOC Content (%) Particle Size Particle Size Distribution	No data available No data available No data available
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10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation.
Skin Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation. Toxic in contact with skin. May be absorbed through the skin in harmful amounts. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed. (based on components).

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	= 300 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms Erythema (skin redness). May cause redness and tearing of the eyes.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity No known effect based on information supplied. May cause adverse liver effects.

Target Organ Effects Respiratory system. Eyes. Skin. Kidney. Liver. Heart.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

500.00 mg/kg

ATEmix (dermal)

1,000.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a severe marine pollutant according to DOT

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8		96h LC50: 0.66 - 1.15 mg/L (Lepomis macrochirus) 96h LC50: 0.1478 - 0.165 mg/L (Oncorhynchus mykiss) 96h LC50: 0.09 - 0.19 mg/L (Oncorhynchus mykiss) 96h LC50: 0.96 - 1.8 mg/L (Lepomis macrochirus) 96h LC50: = 0.6752 mg/L (Pimephales promelas)	EC50 < 0.25 mg/L 30 min EC50 = 0.25 mg/L 15 min EC50 = 1.3 mg/L 5 min	48h EC50: 0.147 - 0.227 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	Toxic

14. TRANSPORT INFORMATION

DOT



Proper Shipping Name	CONSUMER COMMODITY
Hazard Class	ORM-D
Marine Pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT
Description	CONSUMER COMMODITY, ORM-D
Emergency Response Guide Number	171

TDG

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
Description	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

MEX

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
Description	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

ICAO

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
Description	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

IATA

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
Description	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

IMDG/IMO

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
EmS No.	F-A, S-F
Marine Pollutant	Product is a marine pollutant according to the criteria set by IMDG/IMO
Description	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

RID

UN-No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III
Classification code	M7

Description UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

ADR

UN-No. UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III
Classification code M7
Tunnel restriction code (E)
Description UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III

ADN

UN-No. UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III
Classification code M7
Special Provisions 274, 335, 601
Description UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) SULFATE), 9, III
Limited Quantity 5 KG

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

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

US Federal Regulations**SARA 313**

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

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Copper (II) sulfate pentahydrate (1:1:5) - 7758-99-8	7758-99-8	60 - 100	1.0

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances

Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	10 lb	X		X
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CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	X	X	X	X	

International Regulations

Canada

WHMIS Hazard Class

D2B - Toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 2	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
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1-800-572-6501

Revision Date 14-Oct-2014

Revision Note No information available

Disclaimer

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End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date No data available

Revision Date 14-Oct-2014

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Citirc Acid

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Only under proper supervision and according to the directions and precautions provided in the corresponding science educational set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos
Supplier Address 301 Friendship Street
Providence
RI
02903
US
Supplier Phone Number Phone:401-459-6787
Fax:401-459-6775
Contact Phone1-800-587-2872
Supplier Email products@thamesandkosmos.com
Emergency telephone number (US Poison Control)1-800-222-1222

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Emergency Overview



The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance White

Physical State Powder(s) Solid

Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May cause slight eye irritation

PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Citric acid monohydrate	5949-29-1	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.



Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

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

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Uniform Fire Code COMBUSTIBLE DUST/POWDER

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Avoid contact with eyes.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Powder(s) Solid	Odor	Odorless
Appearance	White	Odor Threshold	No information available
Color	No information available		
Property	Values	Remarks/ Method	
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		

Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Low	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component Information**Information on toxicological effects**

Symptoms No information available.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity No known effect based on information supplied.

Target Organ Effects None known.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

14. TRANSPORT INFORMATION

<u>DOT</u>	NOT REGULATED
Proper Shipping Name	NON REGULATED
Hazard Class	N/A
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u>	Not regulated
Proper Shipping Name	NON REGULATED
Hazard Class	N/A
<u>IMDG/IMO</u>	Not regulated
Hazard Class	N/A
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372



SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

CERCLA

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

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

International Regulations**Canada****WHMIS Hazard Class**

Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 14-Oct-2014
Revision Note No information available

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End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date No data available

Revision Date 14-Oct-2014

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Litmus Powder

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Only under proper supervision and according to the directions and precautions provided in the corresponding science educational set instructions.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Thames & Kosmos
Supplier Address 301 Friendship Street
Providence
RI
02903
US
Supplier Phone Number Phone:401-459-6787
Fax:401-459-6775
Contact Phone1-800-587-2872
Supplier Email products@thamesandkosmos.com
Emergency telephone number (US Poison Control)1-800-222-1222

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Emergency Overview



The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Purple

Physical State Powder(s) Solid

Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May cause slight eye irritation

PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

4. FIRST AID MEASURES

First aid measures

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Uniform Fire Code COMBUSTIBLE DUST/POWDER

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Powder(s) Solid	Odor	Odorless
Appearance	Purple	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	

Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Moderate	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component Information**Information on toxicological effects**

Symptoms No information available.

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

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity No known effect based on information supplied.

Target Organ Effects None known.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name
Hazard Class

NOT REGULATED
 NON REGULATED
 N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA
Proper Shipping Name
Hazard Class

Not regulated
 NON REGULATED
 N/A

IMDG/IMO
Hazard Class

Not regulated
 N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL All components are listed either on the DSL or NDSL.

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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372



SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

CERCLA

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

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

International Regulations**Canada****WHMIS Hazard Class**

Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Revision Date	14-Oct-2014
Revision Note	No information available

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End of Safety Data Sheet



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 02/23/2018

Version 1.4

SECTION 1. Identification

Product identifier

Product number	102110
Product name	Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526
CAS-No.	1305-62-0

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Pharmaceutical production, Food and pharmaceutical industry, Cosmetic raw material
-----------------	---

Supplier Name	Thames & Kosmos
Supplier Address	301 Friendship Street Providence RI 02903 US

Supplier Phone Number	Phone:401-459-6787 Fax:401-459-6775 Contact Phone1-800-587-2872
------------------------------	---

Supplier Email	products@thamesandkosmos.com
-----------------------	------------------------------

Emergency telephone number	(US Poison Control) 1-800-222-1222
-----------------------------------	------------------------------------

SECTION 2. Hazards identification

GHS Classification

Skin irritation, Category 2, H315
Serious eye damage, Category 1, H318
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements

H315 Causes skin irritation.
H318 Causes serious eye damage.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

H335 May cause respiratory irritation.

Precautionary Statements

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see supplemental first aid instructions on this label).

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature	Slaked lime.	
Formula	Ca(OH) ₂	H ₂ CaO ₂ (Hill)
Molar mass	74.09 g/mol	

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Calcium hydroxide (>= 90 % - <= 100 %)

1305-62-0

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath

Risk of serious damage to eyes.

Risk of corneal clouding.

Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Do not use light-weight-metal containers.

Tightly closed. Dry.

Store at +5°C to +30°C (+41°F to +86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Calcium hydroxide 1305-62-0</i>			
ACGIH	Time Weighted Average (TWA):	5 mg/m ³	
NIOSH/GUIDE	Recommended exposure limit (REL):	5 mg/m ³	
OSHA_TRANS	PEL:	15 mg/m ³	Form of exposure: Total dust.
	PEL:	5 mg/m ³	Form of exposure: Respirable fraction.
Z1A	Time Weighted Average (TWA):	5 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	white
Odor	odorless
Odor Threshold	Not applicable
pH	12.6 at 68 °F (20 °C) (saturated solution)
Melting point	1022 °F (550 °C) (decomposition)
Boiling point	No information available.
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

Vapor pressure	at 68 °F (20 °C) Not applicable
Relative vapor density	No information available.
Density	2.24 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	1.7 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	Not applicable
Autoignition temperature	No information available.
Decomposition temperature	1022 - 1112 °F (550 - 600 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	not combustible
Bulk density	ca.400 kg/m ³

SECTION 10. Stability and reactivity

Reactivity

exothermic dissolution process with water

Chemical stability

sensitive to moisture

Possibility of hazardous reactions

Exothermic reaction with:

hydrogen sulfide, Light metals, phosphorus, organic nitro compounds, acids

Risk of explosion with:

anhydrides

Conditions to avoid

Exposure to moisture.

Incompatible materials

Light metals

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, FCC, E 526

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact, Ingestion

Target Organs

Eyes

Skin

Respiratory system

Acute oral toxicity

LD50 Rat: 7,340 mg/kg (IUCLID)

Symptoms: Irritations of:, Gastrointestinal tract

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Irritating to respiratory system.

Skin irritation

Rabbit

Result: No irritation

OECD Test Guideline 404

in case of perspiration/moisture corrosive.

Causes skin irritation.

Eye irritation

Rabbit

Result: Severe irritations

(RTECS)

Risk of corneal clouding. Risk of blindness!

Causes serious eye damage.

Specific target organ systemic toxicity - single exposure

May cause respiratory irritation.

Target Organs: Respiratory system

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

	human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 *Gambusia affinis* (Mosquito fish): 160 mg/l; 96 h (IUCLID)

Persistence and degradability

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Partition coefficient: n-octanol/water

Not applicable

Mobility in soil

No information available.

Additional ecological information

Biological effects:

Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Neutralization possible in waste water treatment plants.

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

Calcium hydroxide

Pennsylvania Right To Know

Ingredients

Calcium hydroxide

New Jersey Right To Know

Ingredients

Calcium hydroxide

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer,

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number

102110

Version 1.4

Product name

Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Precautionary Statements

Prevention

P280 Wear eye protection.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

Full text of H-Statements referred to under sections 2 and 3.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 02/23/2018

SAFETY DATA SHEET

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Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur,BP,USP,JP,FCC,E 526

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.