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

RΙ 02903

US

Supplier Phone Number Phone:401-459-6787 Fax:401-459-6775

Contact Phone1-800-587-2872 products@thamesandkosmos.com

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

2. HAZARDS IDENTIFICATION

Classification

Supplier Email

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

Eves

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.

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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 Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. **Effects**

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

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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.

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7. HANDLING AND STORAGE

Precautions for safe 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 ProductsNone 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.

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

Appearance White Odor Odorless

Color No information available Odor Threshold No information available

Property_	<u>Values</u>	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	2g/100ml	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	erNo 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
No data available
No data available
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	= 4090 mg/kg (Rat)	-	= 2300 mg/m ³ (Rat) 2 h
497-19-8			

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 ToxicityNo information available.

STOT - single exposureNo information available.

STOT - repeated exposureNo 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		48h EC50: = 265 mg/L
		LC50: 310 - 1220 mg/L (Pimephales promelas)		

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methodsThis 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 PackagingDispose 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	Corrosive
497-19-8	

14. TRANSPORT INFORMATION

Proper Shipping Name

NOT REGULATED NON REGULATED

Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

Hazard Class 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 HazardYesChronic Health HazardNoFire HazardNoSudden release of pressure hazardNoReactive HazardNo

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.



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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 - HMIS Health Hazards 3 Flammability 0 Physical Hazard 0 Personal Protection

Prepared By Product Stewardship

23 British American Blvd. Latham, NY 12110 1-800-572-6501

Revision Date 14-Oct-2014

Revision NoteNo 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

(II)

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 UseUse 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).



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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

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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



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Revision Date 24-Sep-2014

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.



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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 ProductsNone 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	IDLH: 25 mg/m ³ CN TWA: 1 mg/m ³ Fe
14439-93-1		(vacated) TWA: Triig/iii Te	TWA. Thighir Te
		S*	

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 protectionNo 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

None known

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

AppearanceLight yellowOdorOdorless

Color No information available Odor Threshold No information available

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

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
Lower flammability limit
No data available
No data available
Vapor pressure
No data available

Vapor density No data available None known **Specific Gravity** No data available None known Water Solubility 3q/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 None known

Dynamic viscosity

Explosive properties

Oxidizing properties

No data available
No data available
No data available

Other Information

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

Particle Size Distribution



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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.

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.



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STOT - repeated exposureNo 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 methodsThis 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
 NOT REGULATED

 Proper Shipping Name
 NON REGULATED



Hazard Class N/A

TDG Not regulated

Marine Pollutant This product contains a chemical which is listed as a marine pollutant according to TDG.

MEX Not regulated

ICAO Not regulated

IATA Not regulated

Proper Shipping Name NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

Hazard Class N/A

Marine Pollutant 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

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 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		

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

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

International Regulations

Mexico

National occupational exposure limits

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

HMIS Health Hazards 1 Flammability 0 Physical Hazard 0 Personal Protection

X

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





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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

Only under proper supervision and according to the directions and precautions provided in **Recommended Use**

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 RΙ

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

Enlergency Overview
l de la companya de

Emorgonov 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

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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 No information available.

Effects

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

eves.

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/m³ Fe	(vacated) TWA: 1 mg/m³ Fe	TWA: 1 mg/m³ 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 ProtectionNo 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

Appearance Violet Odor Odorless

Color No information available Odor Threshold No information available

Property Values Remarks/ Method



рН	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/wate	erNo 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 PointNo data availableVOC Content (%)No data availableParticle SizeNo 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.



InhalationSpecific test data for the substance or mixture is not available.Eye ContactSpecific test data for the substance or mixture is not available.Skin ContactSpecific test data for the substance or mixture is not available.IngestionSpecific 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
 NOT REGULATED

 Proper Shipping Name
 NON REGULATED

Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

Hazard Class 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 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

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

International Regulations

Mexico

National occupational exposure limits

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

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Non-controlled

Prepared By

Revision Date

16. OTHER INFORMATION

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

Product Stewardship 23 British American Blvd. Latham, NY 12110

1-800-572-6501 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





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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 UseOnly 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 NameThames & KosmosSupplier Address301 Friendship Street

Providence

RI 02903

US

Supplier Phone Number Phone:401-459-6787

Fax:401-459-6775

Contact Phone1-800-587-2872 products@thamesandkosmos.com

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

2. HAZARDS IDENTIFICATION

Classification

Supplier Email

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

Hazard Statements
Harmful if swallowed
Toxic in contact with skin
Causes skin irritation
Causes serious eye irritation

Physical State Granular Solid

Precautionary Statements - Prevention

Appearance Blue

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)

Fves

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)

U

Odor Odorless

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

<u>General Advice</u> Show this safety data sheet to the doctor in attendance. Immediate medical

attention is required.

Eye ContactRinse 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 Burning sensation. **Effects**

Indication of any immediate medical attention and special treatment needed

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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.

(II)

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7. HANDLING AND STORAGE

Precautions for safe 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)	TWA: 1 mg/m ³ Cu dust and mist	-	IDLH: 100 mg/m ³ Cu dust and
7758-99-8			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.

(II)

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State Granular Solid

AppearanceBlueOdorOdorless

Color No information available Odor Threshold No information available

None known

None known

Property Values Remarks/ Method No data available None known рΗ 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/waterNo data available None known **Autoignition temperature** No data available None known **Decomposition temperature** No data available None known

No data available

No data available

No data available

No data available

Other Information

Kinematic viscosity

Explosive properties

Oxidizing Properties

Dynamic viscosity

Softening Point

VOC Content (%)

Particle Size

No data available

No data available

No data available

Particle Size Distribution

U

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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)	= 300 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	-
7758-99-8			



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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)

(UL)

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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	Daphnia Magna (Water
			Microorganisms	Flea)
Copper (II) sulfate		96h LC50: 0.66 - 1.15 mg/L	EC50 < 0.25 mg/L 30 min	48h EC50: 0.147 - 0.227
pentahydrate (1:1:5)		(Lepomis macrochirus) 96h	EC50 = 0.25 mg/L 15 min	mg/L
7758-99-8		LC50: 0.1478 - 0.165 mg/L	EC50 = 1.3 mg/L 5 min	_
		(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)		

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)	Toxic
7758-99-8	

14. TRANSPORT INFORMATION

DOT



Revision Date 14-Oct-2014 1151713 - Copper (II) Sulfate

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 171

Emergency Response Guide

Number

TDG

UN-No. UN3077

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Hazard Class Packing Group Ш

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 Packing Group

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 Packing Group

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 Packing Group Ш

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 q **Packing Group** Ш 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 Packing Group Ш Classification code M7



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

SULFATE), 9, III

<u>ADR</u>

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 HazardYesChronic Health HazardNoFire HazardNoSudden release of pressure hazardNoReactive HazardNo

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	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous
	Quantities			Substances



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

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	RQ
		RQs	
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

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

International Regulations

Canada WHMIS Hazard Class D2B - Toxic materials



16. OTHER INFORMATION

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

Prepared By
Product Stewardship
23 British American Blvd.

Latham, NY 12110 1-800-572-6501 14-Oct-2014

Revision Note No information available

Disclaimer

Revision Date

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





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

Citirc Acid **Product Name**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Only under proper supervision and according to the directions and precautions provided **Recommended Use**

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

RΙ 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 No information available.

Effects

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

HandlingHandle 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 GuidelinesThis 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 MeasuresHandle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State Powder(s) Solid

Appearance White Odor Odorless

Color No information available Odor Threshold No information available

Property Values Remarks/ Method

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

No data available Lower flammability limit 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/waterNo 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

No data available

Other Information

Oxidizing Properties

Softening PointNo data availableVOC Content (%)No data availableParticle SizeNo 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 ToxicityNo 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 NOT REGULATED

Proper Shipping Name NON REGULATED

Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated

Proper Shipping Name NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

Hazard Class 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 HMIS Health Hazards 1 Flammability 0 Physical Hazard 0 Personal Protection

Prepared By
Product Stewardship
23 British American Blvd.
Latham, NY 12110

1-800-572-6501 14-Oct-2014

Revision Note No information available

Disclaimer

Revision Date

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End of 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

Litmus Powder Product Name

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Only under proper supervision and according to the directions and precautions provided **Recommended Use**

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

RΙ 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 No information available.

Effects

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

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 MeasuresHandle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State Powder(s) Solid

Appearance Purple Odor Odorless

ColorNo information availableOdor ThresholdNo information available

Property Values Remarks/ Method

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	rNo 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	

No data available

Other Information

Oxidizing Properties

Softening Point

VOC Content (%)

Particle Size

No data available

No data available

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 ToxicityNo 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 NOT REGULATED

Proper Shipping Name NON REGULATED

Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated

Proper Shipping Name NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

Hazard Class 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
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 -
HMIS	Health Hazards 1	Flammability 0	Physical Hazard 0	Personal Protection

Prepared ByProduct Stewardship
23 British American Blvd.

Latham, NY 12110 1-800-572-6501 14-Oct-2014

Revision Note No information available

Disclaimer

Revision Date

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End of Safety Data Sheet



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

Revision Date 02/23/2018

Version 1.4

SISECTION 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.

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 H₂CaO₂ (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.

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.

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 Remarks

limits

Calcium hydroxide 1305-62-0

ACGIH Time Weighted Average 5 mg/m³

(TWA):

NIOSH/GUIDE Recommended 5 mg/m³

exposure limit (REL):

OSHA_TRANS PEL: 15 mg/m³ Form of exposure: Total dust.

PEL: 5 mg/m³ Form of exposure: Respirable fraction.

Z1A Time Weighted Average 5 mg/m³

(TWA):

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

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 entrepeneur 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

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

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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/cm3

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/m3

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

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

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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

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

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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.

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,

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

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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 Date02/23/2018

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

Product number 102110 Version 1.4
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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.