

Account # 248432

Grajeda, Erika

RECORDS TO BE REVIEWED FOR SUPPLEMENTAL REQUEST

Needed by: _____

Doctor: NB

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Date Sent: _____

Date Return: _____

LATE RETURN NOTICE: _____

RECORDS SIZE: 0.5"

Date Sent to RR dept 12/13/17

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] CMS

WEST COVINA-BETANCOURT ONLY

12/13/17

767 S. SUNSET AVE. #7
WEST COVINA, CA 91790

ARROWHEAD EVALUATION SERVICES, INC.
1680 Plum Lane
Redlands, California 92374
(909) 335-2323

Patient No: 248432

DATE 08/11/17 TIME 8:00:00 A

APPLICANT: ERIKA GRAJEDA B/D 12/19/73 SS# *****1384 PHONE: 909 518-4007

MAILING ADDRESS: 7 REDROCK LANE POMONA, CA 91766 ALT PHONE:

TYPE OF INJURY: INTERNAL/STRESS EMAIL:

DOCTOR: NELHS BETANCOURT, M.D. TYPE OF EXAM: PANEL QME Panel QME #2055148

SCHEDULING AGENCY: AURELIA PHONE: 951 682 9990

CALLER: SIEGEL, MORENO, STETTLER, APC FAX: 951 682-6849

APP. ATTY. FIRM: GORDON 'EDELSTEIN LLP

APP ATTY: STEVE SCARDINO APP. ATTY PHONE: 213 739-7000

A.A. ADDRESS: 3580 WILSHIRE BLVD #1800 LOS ANGELES CA 90010 A.A. FAX: 213 386-1671

A.A. EMAIL ADDRESS:

DEF. ATTY. FIRM: SIEGEL, MORENO, STETTERL, APC

DEF. ATTY: TODD SHEEHAN DEF. ATTY. PHONE: 951682-9990

DEF. ATTY. ADDRESS: 3600 LIME ST #126 RIVERSIDE CA 92501 DEF. FAX: 951 682-6849

DEF. ATTY EMAIL ADDRESS:

INTERPRETER [] INTERPRETER NAME:

SCHED. AGENCY WILL SET INTERPRETER [] AGENCY PHONE:

INS. CARRIER: YORK INSUR SERV GROUP INC

INS. ADDRESS: P.O. BOX 619079 ROSEVILLE CA 95661

CLAIM REP: BILL LARKIN PHONE: 909 608-7171 FAX:

CLAIM REP. EMAIL ADDRESS:

DATE OF INJURY: CT 09/05/00 - 05/08/13 ADJ. NO. 8973021;840 CLAIM NO. CJPO33971CL

EMPLOYER: CITY OF CLAREMONT/POLICE DEPT.

EMPLOYER ADDRESS: PO BOX 880 CLAREMONT, CA 91711

PATIENT CONFIRM DATE HIST/PX/SENT QME 110 MAILED 05/25/17

COVER LETTER 07/27/17 JOINT, 08/04/17 DEF MED RECS REC'D: [2.75"] [07/27/17] [0.16"] [08/04/17]

X-RAYS: REFERRAL TAKEN BY: KTemple 05/15/17]

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November 17, 2017

Nelhs Betancourt, M.D.
1680 Plum Lane
Redlands, CA 92374

VIA FIRST CLASS MAIL

Re: **Erika Grajeda vs. City of Claremont**

WCAB Number : ADJ8973021 (MDR); ADJ8400789 (POM)
Claim Number : CJP033971CL; CJP028577CL
Date of Injury : 09/05/00 – 05/08/13; 06/01/08 – 06/01/09
Our File Number : 20079285
Panel Number : **2055148**

Dear Dr. Betancourt:

The parties would like to thank you for providing your August 11, 2017 Panel Qualified Medical Evaluation report.

At that time, you requested additional information. More specifically, Material Safety Data Sheets. Please be advised that this information has been obtained from the City of Claremont and the parties are providing same to you by way of this correspondence. Please review and issue a supplemental report regarding same. Should you need additional information to complete your report, please advise the parties in writing.

Thank you for your prompt attention to this matter.

Very truly yours,

SIEGEL, MORENO & STETTLER

A handwritten signature in black ink, appearing to read "TODD M. SHEEHAN".

Todd M. Sheehan, Esq.

TMS:sw:mlb
Enclosures: Material Safety Data Sheets

cc: See Attached Proof of Service

248432

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1 BEFORE THE WORKERS' COMPENSATION APPEALS BOARD
2 CASE NO. ADJ8973021 (MDR); ADJ8400789 (POM)
3 RE: Erika Grajeda v. City of Claremont

4 Siegel, Moreno & Stettler, APC
3600 Lime Street, Suite 126
Riverside, CA 92501
(951) 682-9990
5 ATTORNEYS FOR DEFENDANT, YORK INSURANCE SERVICES GROUP

6 **DECLARATION OF SERVICE BY MAIL**

7 I, the undersigned, declare:

8 That I am, and was at the time of service of the papers herein referred
9 to, over the age of eighteen years, and not a party to the action; and I am
employed in the County of Riverside, California, in which county the within-
10 mentioned mailing occurred. My business address is 3600 Lime Street, Suite
126, Riverside, CA 92501.

11 I further declare that I am readily familiar with the business'
12 practice for collection and processing of correspondence for mailing with the
United States Postal Service; and that the correspondence shall be deposited
13 with the United States Postal Service this same day in the ordinary course of
business. I caused to be served the following document(s):

14 **LETTER TO DR. NELHS BETANCOURT DATED 11/17/17**
MATERIAL SAFETY DATA SHEETS

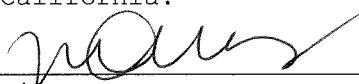
15 by placing the original a true copy thereof enclosed in sealed
16 envelopes addressed as follows:

17 Nelhs Betancourt, MD Bill Larkin
18 1680 Plum Lane York Insurance Services Group
Redlands, CA 92374 P.O. Box 619079
19 Roseville, CA 95661-9079

20 Steve Scardino, Esq.
21 Gordon Edelstein, LLP
3580 Wilshire Blvd., Suite 1800
Los Angeles, CA 90010

22
23 I declare under penalty of perjury under the laws of the State of California
24 that the foregoing is true and correct.

25 Executed December 7, 2017 at Riverside, California.

26 
Mari Briones

Essential Function Analysis

Key:

Frequency: The amount of time or number of times per work period that a task is performed

Never – Does not occur

Seldom – Less than 30 minutes per shift

Occasional – From 1/16 to 1/3 of a shift, or .5 hours to 2.5 hours of an 8-hour day

Frequent – From 1/3 to 2/3 of a shift, or 2.6 to 5.2 hours per 8-hour day

Constant – More than 2/3 of a shift, or more than 5.3 hours per 8 hour day

Occurrence: How often activity or task is performed

Daily – Occurs regularly

Intermittent – Task performed several times throughout the day

Periodic – Not done on a daily basis

Duration: The length of time a task or activity is performed during a session

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A. Physical Demands	Essential										Comments
	Essential		Frequency		Occurrence		Duration				
	Y	N	S	O	F	C	D	I	P		
1. LP Black Magnetic Powder	X		X				X			Up to 15 min.	
2. LP Dual Use Fingerprint Powder	X		X				X			Up to 15 min.	
3. BPMSBM9 Magnetic Print Powder	X		X				X			Up to 15 min.	
4. LP Grey Fingerprint Powder	X		X				X			Up to 15 min.	
5. LP Black Powder	X		X				X			Up to 15 min.	
6. LP 1 Ninhydrin Solution	X		X				X			Up to 5 min.	
7. 201C Ninhydrin Spray	X		X				X			Up to 5 min.	
8. Fume Activator Packet	X		X				X			Up to 2 min.	Placing Activator in and out of fuming tank
9. Duracast Impression Compound	X		X								
10. Tire & Footprint Casting Plaster	X		X								
11. Liquid Silicone (634C)	X		X				X			Up to 1 min.	
12. 205C Silver Nitrate Spray	X		X				X			Up to 1 min.	
13. Sulfuric Acid	X		X				X			Up to 30 sec.	Contained in "Wells-Kit" (drug test kit)
14. Selenous Acid	X		X				X			Up to 30 sec.	Contained in "Wells-Kit" (drug test kit)
15. Cobalt Thiocyanate	X		X				X			Up to 30 sec.	Contained in "Wells-Kit" (drug test kit)
16. Stannous Chloride, Dihydrate	X		X				X			Up to 30 sec.	Contained in "Wells-Kit" (drug test kit)



201C Ninyhydrin Spray,16 oz.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form : Mixture
Product name : 201C Ninyhydrin Spray,16 oz.
Product code : 201C

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

Use of the substance/mixture : Latent fingerprint developer

1.3 Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories

100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4 Emergency telephone number

Emergency number : 1.800.424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 2	H225
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Carc. 1A	H350

Full text of H-phrases: see section 16

2.2 Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H350 - May cause cancer (Dermal, oral)

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof storage containers equipment

P242 - Use only non-sparking tools

P243 - Take precautionary measures against static discharge

P264 - Wash hands, exposed skin thoroughly after handling

P280 - Wear eye protection, protective gloves

P302+P352 - If on skin: Wash with plenty of water/...

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P308+P313 - If exposed or concerned: Get medical advice/attention

P321 - Specific treatment (see contact a physician on this label)

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

P337+P313 - If eye irritation persists: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

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P370+P378 - In case of fire: Use dry chemical, foam, CO₂, water spray to extinguish

P403+P235 - Store in a well-ventilated place. Keep cool

P405 - Store locked up

P501 - Dispose of contents/container to local/regional/national/international regulations

2.3 Other hazards

Other hazards not contributing to the classification

: Toxicity of this product has not been fully tested.

2.4 Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Name	Product Identifier	%	Classification (GHS-US)
Petroleum gases, liquefied, sweetened	(CAS No) 68476-86-8	50 - 55	Not classified
xylene, mixture of isomers	(CAS No) 1330-20-7	20 - 25	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315
ethanol	(CAS No) 64-17-5	10 - 15	Flam. Liq. 2, H225
ethyl acetate	(CAS No) 141-78-6	10 - 15	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
ninydrine	(CAS No) 485-47-2	0.01	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general

: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation

: Allow victim to breathe fresh air. Allow the victim to rest. Cough.

First-aid measures after eye contact

: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist. Direct contact with the eyes is likely to be irritating.

First-aid measures after ingestion

: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation

: Shortness of breath.

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

: Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media

: Do not use a heavy water stream.

5.2 Special hazards arising from the substance or mixture

Fire hazard

: Flammable aerosol. Flammable liquid and vapor. May cause fire or explosion; strong oxidizer.

Explosion hazard

: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapor-air mixture.

Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

5.3 Advice for firefighters

Firefighting instructions

: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. DO NOT fight fire when fire reaches explosives. Evacuate area. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection during firefighting

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

201C Ninyhydrin Spray, 16 oz.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General measures : No open flames. No smoking. Isolate from fire, if possible, without unnecessary risk. Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4 Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. In use, may form flammable vapor-air mixture. Pressurized container: Do not pierce or burn, even after use. Hazardous waste due to potential risk of explosion.

Precautions for safe handling

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not spray on an open flame or other ignition source. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Take any precaution to avoid mixing with combustibles/..

7.2 Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/... equipment.

Storage conditions

: Keep only in the original container in a cool, well ventilated place away from : Do not expose to temperatures exceeding 50 °C/ 122 °F. Keep in fireproof place. Keep container tightly closed.

: Strong bases. Strong acids.

Incompatible products : Sources of ignition. Direct sunlight. Heat sources. Combustible materials.

Incompatible materials

: Storage area : Store in a well-ventilated place.

7.3 Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

201C Ninyhydrin Spray, 16 oz.

ACGIH	Not applicable
OSHA	Not applicable

ninydrine (485-47-2)

ACGIH	Not applicable
OSHA	Not applicable

ethanol (64-17-5)

ACGIH	Not applicable
OSHA	Not applicable

ethyl acetate (141-78-6)

ACGIH	ACGIH TWA (ppm)	400 ppm
-------	-----------------	---------

201C Ninyhydrin Spray, 16 oz.

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ethyl acetate (141-78-6)

ACGIH	ACGIH STEL (ppm)	400 ppm
OSHA	Not applicable	

xylene, mixture of isomers (1330-20-7)

ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	ACGIH STEL (ppm)	100 ppm
OSHA	Not applicable	

Petroleum gases, liquefied, sweetened (68476-86-8)

ACGIH	Not applicable	
OSHA	Not applicable	

8.2 Exposure controls

Personal protective equipment

: Dust/aerosol mask. Gloves. Safety glasses. Avoid all unnecessary exposure. Wear fire/flame resistant/retardant clothing.



Hand protection

: Wear protective gloves.

Eye protection

: Chemical goggles or safety glasses.

Respiratory protection

: Wear appropriate mask.

Other information

: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless, volatile liquid.
Color	: Colorless
Odor	: Irritating/pungent odour
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: May cause fire or explosion; strong oxidizer.
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Insoluble in water. Water: Solubility in water of component(s) of the mixture : • : 2 g/100ml • : 8 g/100ml • : < 0.02 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available

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Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

9.2 Other information

No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2 Chemical stability

Stable under recommended handling and storage conditions (see section 7). Flammable aerosol. Contains gas under pressure; may explode if heated. Extreme risk of explosion by shock, friction, fire or other sources of ignition. Flammable liquid and vapor. May form flammable/explosive vapor-air mixture. May cause fire or explosion; strong oxidizer.

10.3 Possibility of hazardous reactions

Not established.

10.4 Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

10.5 Incompatible materials

Strong acids. Strong bases.

10.6 Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Not classified

nинидрин (485-47-2)	
LD50 oral rat	600 mg/kg (Rat)
ATE US (oral)	600.000 mg/kg body weight
ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
ethyl acetate (141-78-6)	
LD50 oral rat	5620 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value; 10200 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 18000 mg/kg (Rabbit; Experimental value; 24 hour cuff method; >20000 mg/kg bodyweight; Rabbit)
LC50 inhalation rat (mg/l)	70.56 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	19600 ppm/4h (Rat)
ATE US (oral)	5620.000 mg/kg body weight
ATE US (gases)	19600.000 ppmV/4h
ATE US (vapors)	70.560 mg/l/4h
ATE US (dust, mist)	70.560 mg/l/4h
xylene, mixture of isomers (1330-20-7)	
LD50 oral rat	3523 - 8600 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 3523 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; >4000 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 4200 mg/kg body weight (Rabbit; Experimental value; OECD 402: Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	29 mg/l/4h (Rat; Experimental value; 27.57 mg/l/4h; Rat; Experimental value)
ATE US (oral)	3523.000 mg/kg body weight
ATE US (dermal)	1100.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

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Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Based on available data, the classification criteria are not met : May cause cancer (Dermal, oral).

ethanol (64-17-5)

Additional Information	Ethyl alcohol (200 Proof) has been shown to cause cancer in Human and Animals when ingested in volume over time. There is no link to cancer in limited exposure scenarios.
IARC group	1 - Carcinogenic to humans

xylene, mixture of isomers (1330-20-7)

IARC group	3 - Not classifiable
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Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
-----------------------	--

Specific target organ toxicity (single exposure)	: Not classified
--	------------------

Specific target organ toxicity (repeated exposure)	: Not classified
--	------------------

Aspiration hazard	: Not classified
-------------------	------------------

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
---	---

Symptoms/injuries after inhalation	: Shortness of breath.
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SECTION 12 Ecological Information

12.1. Toxicity

ethanol (64-17-5)

LC50 fish 1	14200 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 1	9300 mg/l (48 h; Daphnia magna)
LC50 fish 2	13000 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 2	10800 mg/l (24 h; Daphnia magna)
Threshold limit other aquatic organisms 1	65 mg/l (72 h; Protozoa)
Threshold limit algae 1	1450 mg/l (192 h; Microcystis aeruginosa; Growth rate)
Threshold limit algae 2	5000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)

ethyl acetate (141-78-6)

LC50 fish 1	454.7 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	2500 mg/l (24 h; Daphnia magna)
LC50 fish 2	230 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 2	154 mg/l (48 h; Daphnia magna)
TLM fish 1	100 - 1000,96 h; Pisces
TLM other aquatic organisms 1	100 - 1000,96 h
Threshold limit algae 1	2000 mg/l (96 h; Selenastrum capricornutum; Biomass)
Threshold limit algae 2	15 mg/l (192 h; Scenedesmus quadricauda; Growth rate)

xylene, mixture of isomers (1330-20-7)

LC50 fish 1	13.5 mg/l (96 h; Lepomis macrochirus; Lethal)
EC50 Daphnia 1	150 mg/l (24 h; Daphnia magna)
LC50 fish 2	3.77 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 2	7.4 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	72 mg/l (336 h; Selenastrum capricornutum; Growth)
Threshold limit algae 2	10 mg/l (72 h; Skeletonema costatum)

12.2. Persistence and degradability

201C Ninhydrin Spray, 16 oz	
Persistence and degradability	Not established.

201C Ninhhydrin Spray, 16 oz.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ninhhydrine (485-47-2)	
Persistence and degradability	Biodegradability in water: no data available.
ThOD	1.53 g O ₂ /g substance
ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O ₂ /g substance
Chemical oxygen demand (COD)	1.70 g O ₂ /g substance
ThOD	2.10 g O ₂ /g substance
BOD (% of ThOD)	0.43 % ThOD
ethyl acetate (141-78-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0.293 g O ₂ /g substance
Chemical oxygen demand (COD)	1.69 g O ₂ /g substance
ThOD	1.82 g O ₂ /g substance
xylene, mixture of isomers (1330-20-7)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test) data on mobility of the substance available. Photolysis in the air.

12.3. Bioaccumulative potential

201C Ninhhydrin Spray 16 oz.	
Bioaccumulative potential	Not established.
ninhhydrine (485-47-2)	
Bioaccumulative potential	No bioaccumulation data available.
ethanol (64-17-5)	
BCF fish 1	1 (72 h; Cyprinus carpio)
Log Pow	-0.31 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
ethyl acetate (141-78-6)	
BCF fish 1	30 (3 days; Leuciscus idus)
Log Pow	0.68 (Experimental value; EPA OPPTS 830.7560; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
xylene, mixture of isomers (1330-20-7)	
BCF fish 1	15 8 weeks; Salmo gairdneri (Oncorhynchus mykiss)
BCF fish 2	7 - 26 (8 weeks; Oncorhynchus mykiss)
Log Pow	3.2 (Conclusion by analogy; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

ethanol (64-17-5)	
Surface tension	0.022 N/m (20 °C)
ethyl acetate (141-78-6)	
Surface tension	0.024 N/m (20 °C)
xylene, mixture of isomers (1330-20-7)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

201C Ninyhydrin Spray, 16 oz.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Container under pressure. Do not drill or burn even after use. Dispose of contents/container to ...
Additional information : Flammable vapors may accumulate in the container. Handle empty containers with care because residual vapors are flammable. Hazardous waste due to potential risk of explosion.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : 1950 Consumer commodity (Xylene), 2.1, III

UN-No.(DOT)

: 1950

Proper Shipping Name (DOT)

: Consumer commodity
Xylene

Department of Transportation (DOT) Hazard Classes

: 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT)

: 6.1 - Poison inhalation hazard
2.1 - Flammable gas



Packing group (DOT)

: III - Minor Danger

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

UN-No.(IATA)

: 1950

Proper Shipping Name (IATA)

: Aerosols, flammable, containing substances in Division 6.1, Packing Group III

Class (IATA)

: 2.1 - Gases : Flammable

Packing group (IATA)

: III - Minor Danger

Subsidiary risks (IATA)

: Containing substances in Division 6.1

SECTION 15: Regulatory information

15.1 US Federal regulations

No additional information available

15.2 International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

201C Ninyhydrin Spray, 16 oz.

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Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.1; R45

Muta.Cat.2; R46

F+; R12

Xn; R20/21

Xi; R38

Full text of R-phrases: see section 16

National regulations

201C Ninyhydrin Spray, 16 oz.

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

201C Ninyhydrin Spray, 16 oz.)

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

SECTION 16. Other information

Indication of changes

: Revision - See : *

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice

: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information

: None.

Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 1A	Carcinogenicity Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H350	May cause cancer

201C Ninyhydrin Spray, 16 oz.

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard

: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

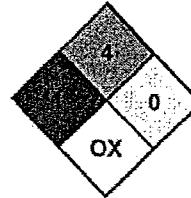
: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

NFPA specific hazard

: OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection

: G

G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.

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SIRCHIE

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/27/2014

Revision date: 01/03/2015

Supersedes: 02/02/2011

BY:

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form

: Mixture

Product name

: BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Product code

: BPMSBM9

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

Use of the substance/mixture

: Latent fingerprint powder

1.3 Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories

100 Hunter Place

Youngsville, NC 27596 - USA

T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181

<http://www.sirchie.com>

1.4 Emergency telephone number

Emergency number

: 1.800.424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2 Label elements

GHS-US labeling

Hazard statements (GHS-US)

: If this product is used as indicated it is unlikely that any adverse health issues will occur. Inhalation or ingestion of significant amounts may cause respiratory irritation and/or gastric disturbances

2.3 Other hazards

Other hazards not contributing to the classification

: None under normal conditions.

2.4 Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Name	Product Identifier	%	Classification (GHS-US)
Iron(II,III)oxide	(CAS No) 1317-61-9	98	Not classified
aluminium,powder,coated,less dangerous	(CAS No) 7429-90-5	2	Not classified

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general

: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation

: Assure fresh air breathing. Allow the victim to rest.

First-aid measures after skin contact

: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact

: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion

: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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4.2. Most Important symptoms and effects, both acute and delayed

Symptoms/injuries

: Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Foam, Dry powder, Carbon dioxide, Water spray, Sand.

Unsuitable extinguishing media

: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions

: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures

: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment

: Equip cleanup crew with proper protection.

Emergency procedures

: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

: On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products

: Strong bases. Strong acids.

Incompatible materials

: Sources of ignition. Direct sunlight.

7.3. Specific end-use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Iron(II,III) oxide (1317-61-9)

USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³
----------	------------------------	----------

aluminum, powder, coated, less dangerous (7429-90-5)

USA ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³

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8.2. Exposure controls

Personal protective equipment

- : Dust formation: dust mask. Gloves. Safety glasses. Avoid all unnecessary exposure.



Hand protection

- : Wear protective gloves.

Eye protection

- : Chemical goggles or safety glasses.

Respiratory protection

- : Wear appropriate mask.

Other information

- : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powders.
Color	: Black
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble in water. Water: Solubility in water of component(s) of the mixture : * :
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other Information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7). Not established.

10.3. Possibility of hazardous reactions

No reactivity hazard other than the effects described in sub-sections below. Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

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Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Iron(II,III)oxide (1317-61-9)

LD50 oral rat	> 10000 mg/kg (Rat)
Skin corrosion/Irritation	: Not classified
Serious eye damage/Irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Iron(II,III)oxide (1317-61-9)

LC50 fish 1	> 1000 mg/l (48 h; Leuciscus idus)
-------------	------------------------------------

12.2. Persistence and degradability

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Persistence and degradability	Not established.
-------------------------------	------------------

Iron(II,III)oxide (1317-61-9)

Persistence and degradability	Biodegradability in water: no data available. Adsorbs into the soil.
-------------------------------	--

aluminum powder, coated, less dangerous (7429-90-5)

Persistence and degradability	Biodegradability in soil: not applicable. Adsorbs into the soil. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Bioaccumulative potential	Not established.
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Iron(II,III)oxide (1317-61-9)

Bioaccumulative potential	No bioaccumulation data available.
---------------------------	------------------------------------

aluminum powder, coated, less dangerous (7429-90-5)

Bioaccumulative potential	No bioaccumulation data available. Not established.
---------------------------	---

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer

: No additional information available

Effect on the global warming

: No known ecological damage caused by this product.

Other information

: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations

: Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials

: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport

Additional Information

Other information

: No supplementary information available.

ADR

Transport document description

:

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Listed on the United States TSCA (Toxic Substances Control Act) inventory

aluminum powder coated less dangerous (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on United States SARA Section 313

SARA Section 313 - Emission Reporting

100 % Aluminum Powder

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

Indication of changes

: Revision - See : *

Revision date

: 01/03/2015

10/20/2014

EN (English US)

BPMSBM9 Magnetic Latent Print Powder, Silver/Black 16 oz.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Data sources

- : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice

- : Keep in tightly closed container. Keep cool and dry. Avoid all ignition sources - heat, open flame, sparks. Avoid incompatible materials. Avoid dust creation and accumulation. Avoid inhalation and ingestion. Avoid contact with eyes. Wash thoroughly after handling. Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information

- : This Safety Data Sheet has been established in accordance with the applicable European Union legislation. None.

NFPA health hazard

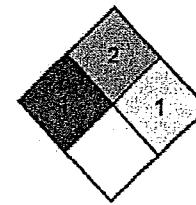
- : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

- : 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.

NFPA reactivity

- : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health

- : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

- : 2 Moderate Hazard

Physical

- : 1 Slight Hazard

Personal Protection

- : E

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.

Material Safety Data Sheet

Version 4.2

Revision Date 07/05/2011

Print Date 11/01/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Cobalt(II) thiocyanate
Product Number : 216135
Brand : Aldrich
Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

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2. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Harmful by skin absorption., Carcinogen

Target Organs

Lungs, Thyroid.

GHS Classification

Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements**Pictogram****Signal word**

Warning

Hazard statement(s)

H302 + H312 Harmful if swallowed or in contact with skin.
H332 Harmful if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0

Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation	Toxic if inhaled. May cause respiratory tract irritation.
Skin	May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Cobaltous thiocyanate

Formula : C2CoN2S2

Molecular Weight : 175.10 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Cobalt(II) thiocyanate 3017-60-5	221-156-8	615-032-00-6	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Dry powder

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx), Sulphur oxides, Cobalt/cobalt oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids. Handle and store under inert gas. Hygroscopic. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Cobalt(II) thiocyanate	3017-60-5	TWA	0.02 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)

Remarks Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. varies

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form powder

Colour no data available

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Avoid moisture.

Materials to avoid

Oxidizing agents, acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx), Sulphur oxides, Cobalt/cobalt oxides

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

no data available

Inhalation LC50

Dermal LD50

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) thiocyanate)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) thiocyanate)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	Toxic if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Nausea, Headache, Vomiting

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

UN number: 3077 Class: 9

Packing group: III

EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) thiocyanate)

Marine pollutant: Marine pollutant

IATA

UN number: 3077 Class: 9

Packing group: III

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cobalt(II) thiocyanate)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards

Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Harmful by skin absorption., Carcinogen

SARA 302 Components

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

SARA 313 Components

	CAS-No.	Revision Date
Cobalt(II) thiocyanate	3017-60-5	2007-03-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cobalt(II) thiocyanate	3017-60-5	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cobalt(II) thiocyanate	3017-60-5	2007-03-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Durocast Impression Compound 660g.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: V

Supersedes:01/26/2011

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Version:

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name: Durocast Impression Compound 660g.
Product code : DOC1001

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

Use of the substance/preparation : Crime Scene Investigation

1.3. Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories
100 Hunter Place
27596 Youngsville, NC - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4. Emergency telephone number

Emergency number : 1.800.424.9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P331 - If swallowed, do NOT induce vomiting.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification (GHS-US)
Dimethyl polysiloxane	(CAS No.)63148-62-9	100	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

Durocast Impression Compound 660g.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions

: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products

: Strong bases. strong acids.

Incompatible materials

: Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment

: Gloves. Safety glasses. Avoid all unnecessary exposure.



Hand protection

: Wear protective gloves.

Eye protection

: Chemical goggles or safety glasses.

Respiratory protection

: Wear approved mask.

Other information

: When using, do not eat, drink or smoke.

Durocast Impression Compound 660g.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid paste.
Color	: purple.
Odor	: Lemon odour.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classifiedBased on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classifiedBased on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified

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Specific target organ toxicity (repeated exposure) : Not classifiedBased on available data, the classification criteria are not met

Aspiration hazard : Not classifiedBased on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Durocast Impression Compound 660g.

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Durocast Impression Compound 660g.

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Durocast Impression Compound 660g.

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

NFPA health hazard

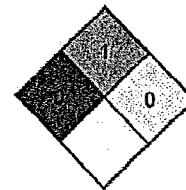
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 0 Minimal Hazard - No significant risk to health

Flammability

: 1 Slight Hazard

Physical

: 0 Minimal Hazard

Personal Protection

: B

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.

Essential Function Analysis

Key:

Frequency: The amount of time or number of times per work period that a task is performed

Never – Does not occur

Seldom – Less than 30 minutes per shift

Occasional – From 1/16 to 1/3 of a shift, or .5 hours to 2.5 hours of an 8-hour day

Frequent – From 1/3 to 2/3 of a shift, or 2.6 to 5.2 hours per 8-hour day

Constant – More than 2/3 of a shift, or more than 5.3 hours per 8-hour day

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Occurrence: How often activity or task is performed

Daily – Occurs regularly

Intermittent – Task performed several times throughout the day

Periodic – Not done on a daily basis

Duration: The length of time a task or activity is performed during a session

A. Physical Demands	Essential							Comments
	N	S	O	F	C	D	P	
1. LP Black Magnetic Powder	X		X			X	Up to 15 min	
2. LP Dual Use Fingerprint Powder	X		X			X	Up to 15 min.	
3. BPMISBMg Magnetic Print Powder	X		X			X	Up to 15 min.	
4. LP Grey Fingerprint Powder	X		X			X	Up to 15 min.	
5. LP Black Powder	X		X			X	Up to 15 min.	
6. Lp 1 Ninhhydrin Solution	X		X			X	Up to 5 min.	
7. 20%C Ninhhydrin Spray	X		X			X	Up to 5 min.	
8. Fume Activator Packet	X		X			X	Up to 2 min.	Placing Activator in and out of fuming tank
9. Durcast Impression Compound	X		X					
10. Tire & Footprint Casting Plaster	X	X						
11. Liquid Silicone (634C)	X		X			X	Up to 1 min.	
12. 205C Silver Nitrate Spray	X		X			X	Up to 1 min.	
13. Sulfuric Acid	X		X			X	Up to 30 sec	Contained in "Wells-Kit" (drug test kit)
14. Selenium Acid	X		X			X	Up to 30 sec	Contained in "Wells-Kit" (drug test kit)
15. Cobalt Thiocyanate	X		X			X	Up to 30 sec	Contained in "Wells-Kit" (drug test kit)
16. Stannous Chloride, Dihydrate	X		X			X	Up to 30 sec	Contained in "Wells-Kit" (drug test kit)

1. Identification

Name of the product: Fume Activator Packet
Recommended use: Investigation
Use not recommended: Any use which results in skin contact.
Company: Lynn Peavey Company
10749 West 84th Terrace
Lenexa, Kansas 66214-3612
Telephone: 913-888-0600
Fax number: 913-495-6757
Publication Date: June 27, 2014
SDS Code: LP HS
Product numbers: 06622
Product Information: 800-225-6499
Emergency Number: Chemtrec 800-424-9300
CPR STATEMENT: This product has been classified in accordance with the criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required.

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2. Hazard(s) identification

Emergency overview
OSHA Hazards: Eye Irritant
Signal word: None (Hazards do not reach threshold required for least severe category.)
Pictogram: None (Hazards do not reach threshold required for least severe category.)
H315 Causes skin irritation
H320 Causes eye irritation
P281 Use personal protective equipment as required
Keep out of waterways.

3. Composition / Information on ingredients

Chemical identity:	2-Hydroxy-1,2,3-propanetricarboxylic acid	10%
Common name:	Citric acid , fruit acid	
Numbers of identity:	CAS 77-92-9	
Chemical identity:	Water	90%
Common name:	Water	
Numbers of identity:	CAS# 7732-18-5	
Chemical identity:	FD&C Red #40	<0.1%
Common name:	None	
Numbers of identity:	CAS# 26956-17-6	

4. First-aid measures

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+352 IF ON SKIN: Wash with soap and water
P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
Rinse skin with water.
P304+341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes.
Remove contact lenses if present and easy to do; continue rinsing.

5. Firefighting measures

Suitable extinguishing media : Product is not flammable.
Use equipment appropriate for the main cause of a fire.
Precautions:
Special protective equipment for firefighters: No special protective equipment required.
Flash point: Does not flash.
Autoignition temperature: Does not ignite.
Specific hazards in case of fire: Sulfur oxides produced if product is dried and burned.
Special protective equipment and precaution for fire fighters: None required.

6. Accidental release measures

Personal precautions:
Spill may be slippery.
Environmental precautions:
Prevent spills from entering storm sewers or drains and contact with soil.
Methods and materials for containment and cleaning up:
Vacuum or mop up for possible use or reclaim. Common industrial absorbents may be used.
Dispose as non hazardous waste.

7. Handling and storage

Precautions for safe handling:

Avoid contact with eyes. Avoid prolonged or repeated skin contact and breathing mists/vapors.

Conditions for safe storage, including incompatibilities:

Standard safe storage conditions are appropriate: avoid package damage and extremes in temperature: below 32° and above 120°F.

8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any spray developed.

Exposure Limits: Reference 29CFR 1910.1000 Table Z-1

Component Name (CAS)	TWA	STEL
Citric acid CAS 77-92-9	ppm mg/m3	ppm mg/m3
FD&C Red #40 CAS# 25956-17-6	NA NA	NA NA

NE=Not Established

Personal protective equipment

Respiratory protection: No requirement anticipated.

Hand protection: Rubber gloves.

Eye protection: Safety glasses with side-shields.

Skin and body protection: Chemical resistant apron or protective suit if splashing or repeated contact with solution is likely.

Hygiene measures

Wash hands and face before breaks and immediately after handling the product.

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance: Clear red liquid

Odor: Nil

Odor threshold: Not available

pH-value: Acid

Melting point: Not available

Freezing Point: Not available

Initial boiling point: Approximately 100°C.

Flash point: Does not flash.

Evaporation rate: Not available

Flammability (solid, gas): Not applicable

Explosion limits: Not explosive

Vapor pressure: (highest partial vapor pressure) at 20°C: Not available

Vapor density: Not available

Relative density (water=1.00): Not available

9. Physical and chemical properties (continued)

Solubility: Totally soluble in water at 20°C

Partition coefficient: Log Kow = Not applicable to mixture.

Auto-ignition temperature: Not available

Decomposition temperature: Not available

Viscosity: Like water

10. Stability and reactivity

Chemical stability: No decomposition, if used according to specifications.

Possibility of hazardous reactions: Hydrogen may be formed by contact with metals listed below.

Conditions to avoid: No dangerous conditions known.

Materials to avoid: Avoid concentrated contact with aluminum tin, lead or zinc coated metals.

Carbon dioxide formed upon contact with carbonates.

Hazardous decomposition products: None are known. Also see Section 5.

11. Toxicological information

Acute Toxicity: No information available for finished product.

Test	Citric acid	FD&C Red #40
Oral Toxicity LD 50 (Rats)	5400 mg/kg (OECD 401)	>10000 mg/kg
Dermal Toxicity LD 50 (Rats)	>2000 mg/kg (OECD 402)	>10000 mg/kg
Inhalation Toxicity, Vapor	No data	No data
Eye Irritation (Rabbit)	Irritating (OECD 405)	No data
Dermal Irritation (Rabbit)	Mild (OECD 404)	No data

Likely/ possible routes of exposure: Ingestion, skin and eye contact.

Skin: The product is not expected to be toxic by skin absorption.

Oral: The product is not expected to be toxic by ingestion.

Inhalation: The product is not expected to be toxic by inhalation.

H305 May be harmful if swallowed and enters airways

Irritation

H315 Causes skin irritation

H320 Causes eye irritation

Sensitization: Prolonged or repeated exposure may cause allergic reactions in sensitive individuals.

Chronic toxicity: Prolonged skin contact may defat the skin and produce dermatitis.

Carcinogenicity: Not listed by NTP, IARC, OSHA or ACGIH as a suspect or potential carcinogen.

Summary Comments: Product may have a drying effect on the skin; frequent or prolonged contact may cause flaking or cracking of the skin.

12. Ecological information

Persistence and degradability:

This product is expected to be inherently biodegradable.

Bio-accumulative potential: There is no evidence to suggest bioaccumulation will occur.

Mobility: Accidental spillage may lead to penetration in the soil and groundwater. However, there is no evidence that this would cause adverse ecological effects.

Ecotoxicity: The product has not been tested. The following data is reported for citric acid:

Toxicity Fish LC50 - Leuciscus idus melanotus - 440 mg/l - 48 h

Toxicity to daphnia and static test - Daphnia magna (Water flea) - 1,535 mg/l - 24 h

FD&C Red #40 No data

13. Disposal considerations

Product as made has the characteristic of corrosivity because of low pH and qualifies as

"Unlisted Hazardous Waste D002", RQ 100#.

Dispose in accordance with local, state and federal regulations.

14. Transport information

Domestic transport: Not classified as dangerous goods under transport regulations.

Sea transport (IMDG: Not classified as dangerous goods under transport regulations.

Air transport (IATA/CAO): Not classified as dangerous goods under transport regulations.

15. Regulatory information

Inventory Status:

All components are on TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Regulations:

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

SARA (311/312) HAZARD CATEGORIES:

None

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.

Chemical Name	CAS Number	Concentration
None	Not applicable	Not applicable

The following product components are cited on the lists below:

Chemical Name	CAS Number	List Citations
Citric acid	CAS 77-92-9	PA, NJ

California Prop. 65 chemicals: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other information

MSDS Preparation date: June 16, 2014

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8, OSHA 29 CFR 1910.1200 and SARA 302/311/312/313.
Immediate	Yes	No	No	No	
Delayed	No	No	XXX	XXX	

HMIS Hazard ratings: Health 1 Fire 0 Instability 0 Other_B (Goggles, gloves)

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

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MSDS's found from ingredient suppliers do not provide sufficient information for complete categorization of the hazards as of the date of preparation of this document. Expert opinion and judgment has been used where deemed necessary and appropriate.

Note: The information in this SDS was obtained from current reputable and competent sources. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.



634C Liquid Silicone 1 lb. Jar

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form : Mixture
Product name : 634C Liquid Silicone 1 lb. Jar
Product code : 634C

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

Use of the substance/mixture : Crime Scene Investigation

1.3 Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories
100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4 Emergency telephone number

Emergency number : 1.800.424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2 Label elements

GHS-US labeling

No labeling applicable

2.3 Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4 Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Name	Product identifier	%	Classification (GHS-US)
Silicon RTV-3112 Base (XIAMETER)		75	Not classified
Silicone Fluid 100CS PMX-200 (XIAMETER)		25	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

- First-aid measures general : It is unlikely that First Aid will be necessary.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

634C Liquid Silicone 1 lb. Jar

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : All extinguishing media allowed.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No fire hazard.

Reactivity : No hazardous combustion products known.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. No specific fire-fighting instructions required.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.4. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Collect spillage.

6.7. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

634C Liquid Silicone 1 lb. Jar

ACGIH	Not applicable
OSHA	Not applicable

Silicon RTV-3112 Base (XIAMETER)

ACGIH	Not applicable
OSHA	Not applicable

Silicone Fluid 100CS PMX-200 (XIAMETER)

ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

634C Liquid Silicone 1 lb. Jar

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Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Crystalline powder.
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2 Other information

No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous combustion products known.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.

10.4 Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5 Incompatible materials

Strong acids. Strong bases.

10.6 Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

634C Liquid Silicone 1 lb. Jar

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Acute toxicity	: Not classified (Based on available data, the classification criteria are not met)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

634C Liquid Silicone 1 lb. Jar

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

634C Liquid Silicone 1 lb. Jar

Bioaccumulative potential	Not established.
---------------------------	------------------

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : N/A

UN-No.(DOT) : N/A

Packing group (DOT) : None specified

Additional information

Other information : No supplementary information available.

634C Liquid Silicone 1 lb. Jar

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ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US. Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DSD]

Not classified

National regulations

No additional information available

15.3. US. State regulations

No additional information available

SECTION 16: Other information

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice

: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other Information

: None.

NFPA health hazard

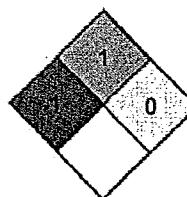
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

: 1 Slight Hazard - Irritation or minor reversible injury possible

Health

: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi-solids having a flash point above 200 F. (Class II(B))

Flammability

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Physical

: none recommended

Personal Protection

SDS US (GHS HazCom 2012)

634C Liquid Silicone 1 lb. Jar

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The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.



205C Silver Nitrate Spray

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form : Mixture
Product name : 205C Silver Nitrate Spray
Product code : 205C

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

Use of the substance/mixture : Latent fingerprint developer

1.3 Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories
100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4 Emergency telephone number

Emergency number : 1.800.424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 2	H225
Eye Irrit. 2A	H319
STOT SE 3	H336

Full text of H-phrases: see section 16

2.2 Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US)

: P210 - Keep away from Open flame, sparks, - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof storage cabinet equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing fumes, vapors
P264 - Wash hands and any other exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear gloves, appropriate mask, safety glasses
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep 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
P312 - Call a poison center/doctor/... if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P370+P378 - In case of fire: Use water spray, CO₂, dry chemical media to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to ...

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
acetone	(CAS No) 67-64-1	94	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
silver nitrate	(CAS No) 7761-88-8	3	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314
AQUA	(CAS No) 7732-18-5	3	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

- : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- : Allow victim to breathe fresh air. Allow the victim to rest.
- : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see ... on this label).
- : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. Specific treatment (see ... on this label).

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact

- : Causes skin irritation.

Symptoms/injuries after ingestion

- : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

- : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media

- : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard

- : Flammable liquid and vapor.

Explosion hazard

- : May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions

- : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

- : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures

- : Evacuate unnecessary personnel.

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6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/... equipment.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed.
Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

205C Silver Nitrate Spray

ACGIH	Not applicable
OSHA	Not applicable

acetone (67-64-1)

ACGIH	ACGIH TWA (ppm)	500 ppm
ACGIH	ACGIH STEL (ppm)	500 ppm
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

silver nitrate (7761-88-8)

ACGIH	ACGIH TWA (mg/m³)	0.01 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	0.01 mg/m³

AQUA (7732-18-5)

ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

- Personal protective equipment : Dust/aerosol mask. Gloves. Safety glasses. Avoid all unnecessary exposure.



Hand protection

- : Wear protective gloves.

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- | | |
|--------------------------|--|
| Eye protection | : Chemical goggles or safety glasses. |
| Skin and body protection | : Wear suitable protective clothing. |
| Respiratory protection | : Wear appropriate mask. |
| Other information | : Do not eat, drink or smoke during use. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless liquid.
Color	: Colorless
Odor	: strong characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Soluble in water. Water: Solubility in water of component(s) of the mixture : • : 144 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established. Flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

: Not classified

205C Silver Nitrate Spray	
LD50 oral rat	> 9 g/kg
LD50 dermal rabbit	20 g/kg
ATE US (dermal)	20000.000 mg/kg body weight
acetone (67-64-1)	
LD50 oral rat	5800 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rabbit	20000 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 402)
LC50 Inhalation rat (mg/l)	71 mg/l/4h (Rat; Experimental value; 76 mg/l/4h; Rat; Experimental value)
LC50 Inhalation rat (ppm)	30000 ppm/4h (Rat; Experimental value)
ATE US (oral)	5800.000 mg/kg body weight
ATE US (dermal)	20000.000 mg/kg body weight
ATE US (gases)	30000.000 ppm/4h
ATE US (vapors)	71.000 mg/l/4h
ATE US (dust, mist)	71.000 mg/l/4h
silver nitrate (7761-88-8)	
LD50 oral rat	1173 mg/kg (Rat)
ATE US (oral)	1173.000 mg/kg body weight

Skin corrosion/irritation

: Not classified

Serious eye damage/irritation

: Causes serious eye irritation.

Respiratory or skin sensitization

: Not classified

Germ cell mutagenicity

: Not classified

Based on available data, the classification criteria are not met

Carcinogenicity

: Not classified

Reproductive toxicity

: Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure)

: May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure)

: Not classified

Aspiration hazard

: Not classified

Potential Adverse human health effects and symptoms

: Toxic if swallowed.

Symptoms/injuries after skin contact

: Causes skin irritation.

Symptoms/injuries after ingestion

: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

acetone (67-64-1)	
LC50 fish 1	6210 mg/l (96 h; Pimephales promelas; Nominal concentration)
EC50 Daphnia 1	8800 mg/l (48 h; Daphnia pulex)
LC50 fish 2	5540 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	13000 ppm (96 h; Gambusia affinis; Turbulent water)
TLM fish 2	> 1000 ppm (96 h; Pisces)
Threshold limit other aquatic organisms 1	3000 mg/l (Plankton)
Threshold limit other aquatic organisms 2	28 mg/l (Protozoa)
Threshold limit algae 1	7500 mg/l (Scenedesmus quadricauda; pH = 7)
Threshold limit algae 2	3400 mg/l (48 h; Chlorella sp.)

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silver nitrate (7761-88-8)

LC50 fish 1	0.0039 mg/l (96 h; <i>Pimephales promelas</i>)
EC50 Daphnia 1	0.0006 mg/l (48 h; <i>Daphnia magna</i> ; Locomotor effect)
LC50 fish 2	0.006 mg/l (96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>))
EC50 Daphnia 2	0.006 mg/l (48 h; <i>Crangon sp.</i>)
Threshold limit algae 1	0.0007 mg/l (<i>Microcystis aeruginosa</i> ; Toxicity test)
Threshold limit algae 2	0.0095 mg/l (<i>Scenedesmus quadricauda</i> ; Toxicity test)

12.2 Persistence and degradability

205C Silver Nitrate Spray

Persistence and degradability	Not established.
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acetone (67-64-1)

Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.43 g O ₂ /g substance
Chemical oxygen demand (COD)	1.92 g O ₂ /g substance
ThOD	2.20 g O ₂ /g substance
BOD (% of ThOD)	(20 day(s)) 0.872

silver nitrate (7761-88-8)

Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3 Bioaccumulative potential

205C Silver Nitrate Spray

Bioaccumulative potential	Not established.
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acetone (67-64-1)

BCF fish 1	0.69 (Pisces)
BCF other aquatic organisms 1	3
Log Pow	-0.24 (Test data)
Bioaccumulative potential	Not bioaccumulative.

silver nitrate (7761-88-8)

BCF fish 1	11 - 19 (<i>Micropterus salmoides</i> ; Chronic)
BCF fish 2	15 - 150 (<i>Lepomis macrochirus</i> ; Chronic)
Log Pow	0.19 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4 Mobility in soil

acetone (67-64-1)

Surface tension	0.0237 N/m
-----------------	------------

12.5 Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to ...

Additional information : Handle empty containers with care because residual vapors are flammable.

205C Silver Nitrate Spray

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Ecology - waste materials

: Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description

: UN1090 Acetone, 3, II

UN-No.(DOT)

: UN1090

Proper Shipping Name (DOT)

: Acetone

Department of Transportation (DOT) Hazard Classes

: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT)

: 3 - Flammable liquid



Packing group (DOT)

: II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx)

: 202

DOT Packaging Bulk (49 CFR 173.xxx)

: 242

DOT Special Provisions (49 CFR 172.102)

: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (t_r - t_f)$ Where: t_r is the maximum mean bulk temperature during transport, and t_f is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Additional information

Other information

: No supplementary information available.

ADR

Hazard labels (ADR)

: 3 - Flammable liquids



Transport by sea

UN-No. (IMDG)

: 1090

Proper Shipping Name (IMDG)

: ACETONE

Class (IMDG)

: 3 - Flammable liquids

Packing group (IMDG)

: II - substances presenting medium danger

Air transport

UN-No.(IATA)

: 1090

Proper Shipping Name (IATA)

: Acetone

Class (IATA)

: 3 - Flammable Liquids

Packing group (IATA)

: II - Medium Danger

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SECTION 15: Regulatory information

15.1 US Federal regulations

205C Silver Nitrate Spray

Listed on United States SARA Section 313

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2 International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DDP]

F; R11

O; R8

Xi; R36

N; R50/53

R66

R67

Full text of R-phrases: see section 16

National regulations

No additional information available

15.3 US State regulations

No additional information available

SECTION 16: Other information

Indication of changes

: Revision - See : *

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice

: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information

: None.

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Ox. Sol. 2	Oxidizing solids Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

205C Silver Nitrate Spray

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard

: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

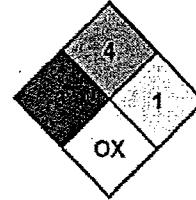
: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

NFPA specific hazard

: OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



HMIS III Rating

Health

: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability

: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical

: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal Protection

: G

G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.

Safety Data Sheet



Lynn Peavey Company
10749 W. 84th Terrace
Lenexa, KS 66214

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BY:

1. Identification

Product Name:	1 Gallon Ninhydrin Solution (15078)	MSDS Number:	LP NS 15078 05060
	8 Ounce Ninhydrin Solution (05060)	Replaces:	May 28, 2013
Product use:	Fingerprint detection	Phone:	913-888-0600
Chemical Family or Formula:	Mixture	Fax:	913-495-6757
Supplier:	Lynn Peavey Company 10749 W. 84th Terrace Lenexa, KS 66214	Email:	lpv@peaveycorp.com
Product Information:	913-888-0600		
Transportation Emergency:	800-424-9300 (U.S. and North America) (703) 527-3887 (Outside U.S. collect calls accepted)		

2. Hazard(s) identification

GHS Classification in accordance with 29 CFR 1910

None: Hazards do not reach threshold required for least severe of any category.

GHS Label elements, including precautionary statements

Signal word: None (Hazards do not reach threshold required for least severe category.)

Pictogram: None (Hazards do not reach threshold required for least severe category.)

Hazard statements:

H319 May cause eye irritation.

H335 May cause respiratory irritation.

Precautionary statements:

P281 Use personal protective equipment as required.

P260 Do not breathe dust or mist.

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

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

3. Composition / Information on ingredients

Chemical identity:	Methyl nonafluorobutyl ether	20-80% per supplier
Common name:	Same	
Numbers of identity:	CAS 163702-07-6	
Chemical identity:	Methyl nonafluoroisobutyl ether	20-80% per supplier
Common name:	Same	
Numbers of identity:	CAS 163702-08-7	
Chemical identity:	Indan-1,2,3-trione (Ninhydrin)	0.16%
Common name:	Ninhydrin crystals	
Numbers of identity:	CAS 485-47-2	EC 207-618-1
Impurities:	None known which affect classification.	

Safety Data Sheet

4. First-aid measures

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of danger.

If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact:

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: Eye irritation.

Indication of any immediate medical attention and special treatment needed when necessary:

5. Firefighting measures

Suitable extinguishing media: Product is not flammable. Use media appropriate to main cause of fire.

Examples: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: None known.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Avoid breathing vapors if developed.

Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

Environmental precautions:

Prevent more spillage if safe to do. Avoid discharge into drains and the environment.

Store in a suitable, closed container for disposal or reclaim.

For disposal see section 13.

7. Handling and storage

Handling:

Avoid contact with skin and eyes. Avoid spillage.

Provide appropriate exhaust ventilation at places where vapors formed. For precautions see section 2.

Storage: Keep container tightly closed in a dry place.

Safety Data Sheet

8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any mist or vapors developed.

CAS #	Material or Component	Prop.		Exposure Limits	
		RQ#	65?	TWA*	STEL*
485-47-2	Indan-1,2,3-trione (Ninhidrin)	None	No	NE	NE
163702-07-6	Methyl nonafluorobutyl ether	None	No	NE	NE
163702-08-7	Methyl nonafluoroisobutyl ether	None	No	NE	NE

*TWA= Time Weighted Average; STEL= Short Term Exposure Limit;

*WEEL= Workplace Employee Exposure Level NE= Not Established

Personal protective equipment :

Respiratory protection: No requirement anticipated.

Hand protection: Rubber gloves to keep liquid off skin.

Eye protection: Safety glasses with side-shields as required.

Skin and body protection: Chemical resistant apron or protective suit if contact is likely.

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

Wash hands and face before breaks and immediately after handling the product.

9. Physical and chemical properties (based on major ingredients)

Appearance: Clear, colorless, liquid.

Odor: Slight ethereal odor. (Plus slight vinegar note)

Odor threshold: Not available

pH-value: Not applicable

Melting point: -135 °C <

Freezing Point: -135 °C <

Initial boiling point: 61 °C @ 760 mmHg

Flash point: Does not flash.

Evaporation rate: Not applicable

Flammability (solid, gas): Not applicable

Explosion limits: Not explosive

Vapor pressure: 202 mmHg @ 25 °C

Vapor density: Air = 1

Relative density (water=1.00): 1.5

Solubility in water: 12 ppm for fluorinated component

Partition coefficient: Log Kow = Not applicable to mixture.

Auto-ignition temperature: Not available

Decomposition temperature: Not available

Viscosity: 0.6 centipoise @ 23 °C

10. Stability and reactivity

Chemical stability: No decomposition, if used according to specifications.

Possibility of hazardous reactions: Contact with acids will generate hydrogen gas.

Conditions to avoid: No dangerous conditions known. Humidity will rust the product.

Materials to avoid: Reacts with all acids, organic and mineral.

Hazardous decomposition products: None are known. Also see Section 5.

Safety Data Sheet

11. Toxicological information

Acute Toxicity: No information available for finished product.

Test	Combined fluorocarbons	Indan-1,2,3-trione (Ninhhydrin)
	CAS 163702-07-6 and 163702-08-7	CAS 485-47-2
Oral Toxicity LD 50 (Rats)	>5 g/kg	600 mg/kg
Dermal Toxicity LD 50 (Rabbit)	Not a significant route of exposure.	No data
Inhalation Toxicity, Vapor, LC50	>100,000 ppm, rat, 4 hr	No data
Eye Irritation (Rabbit)	Minimal	No data
Dermal Irritation (Rabbit)	Minimal	No data
Germ cell mutagenicity:	Negative	No data
Carcinogenicity	No data	No data

No component listed by NTP, IARC, OSHA or ACGIH as a suspect or potential carcinogen is present in this product above 0.1%. California Prop. 65: None

Signs and Symptoms of Exposure:

Material may be irritating to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms include: mild skin or eye irritation.

12. Ecological information

There is no ecological information available for the product.

Combined fluorocarbons

Fathead Minnow, Pimephales promelas	96 hours Lethal Concentration 50%	Result >7.9 mg/l
Green algae, Selenastrum capricornutu	96 hours Inhibitory Concentration 50%	>8.9 mg/l
Water flea, Daphnia magna	48 hours Effect Concentration 50%	>10 mg/l

Indan-1,2,3-trione (Ninhhydrin)

No information

Product: No data available.

Persistence and degradability:

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment:

PBT/ vPvB assessment not available because chemical safety assessment not required/not conducted.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. Disposal considerations

Dispose in accordance with local, state and federal regulations.

Dispose of contaminated packaging as unused product.

14. Transport information

DOT (US) Not dangerous goods

IMDG Not dangerous goods

IATA Not dangerous goods

Safety Data Sheet

15. Regulatory Information

Inventory Status:

All components are on TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Regulations:

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

SARA (311/312) HAZARD CATEGORIES:

None

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.

Chemical Name	CAS Number	Concentration
None		

The following product components are cited on the lists below:

Chemical Name	CAS Number	Right to Know (RTK) List Citations
Indan-1,2,3-trione (Ninhhydrin)	CAS 485-47-2	PA, NJ

California Prop. 65 chemicals: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

SDS Preparation date: March 19, 2015

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8, OSHA 29 CFR 1910.1200 and SARA 302/311/312/313.
Immediate	Yes	No	No	No	
Delayed	No	No	XXX	XXX	

HMIS Hazard ratings: Health 1 Fire 0 Instability 0 Other B (Goggles, gloves)

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

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Note: The information in this SDS was obtained from current reputable and competent sources.

However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.

This SDS contains all the information required for classification by the Canadian CPR.

This SDS is designed for workplace employees, emergency personnel and for other conditions and situations where there is a greater potential for large-scale or prolonged exposure, in accordance with requirements of the U.S. Government's Occupational Safety and Health Administration (OSHA).



**Lynn Peavey Company
10749 W. 84th Terrace
Lenexa, KS 66214**

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OCT 11 2017

R.Y.

1. Identification

Product Name:	Lynn Peavey Black Magnetic Powder	MSDS Number:	LP BMP
Item number:	See "Product Codes"	Product Codes:	01183, 01943,
Product use:	Helps reveal fingerprints.	30051, 30113, 55571, 55571 NL,	55577, 55586, 55598.
Chemical Family or Formula:	Mixture	Phone:	913-888-0600
Supplier:	Lynn Peavey Company 10749 W. 84th Terrace Lenexa, KS 66214	Fax:	913-495-6757
Product Information:	913-888-0600	Email:	lpv@peaveycorp.com
Transportation Emergency::	800-424-9300 (U.S. and North America) (703) 527-3887 (Outside U.S. collect calls accepted)		

2. Hazard(s) identification

GHS Classification in accordance with 29 CFR 1910

None: Hazards do not reach threshold required for least severe of any category.

GHS Label elements, including precautionary statements

Signal word: None (Hazards do not reach threshold required for least severe category.)

Pictogram: None (Hazards do not reach threshold required for least severe category.)

Hazard statements:

H319 May cause eye irritation.

H335 May cause respiratory irritation.

Precautionary statements:

P281 Use personal protective equipment as required.

P260 Do not breathe dust or mist.

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

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

3. Composition / Information on Ingredients

Chemical identity:	Iron powder	65%
Common name:	Iron powder	
Numbers of identity:	CAS 7439-89-6	EC 231-096-4
Impurities:	None which influence classification	
Chemical identity:	Dilron trioxide	35%
Common name:	Ferric oxide	
Numbers of identity:	CAS 1309-37-1	EC 215-168-2
Impurities:	None which influence classification	

4. First-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of danger.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: Severe eye irritation.

Indication of any immediate medical attention and special treatment needed when necessary: No data.

5. Firefighting measures

Suitable extinguishing media: Product is not flammable. Use media appropriate to main cause of fire.

Examples: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: None known.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Avoid dust formation. Avoid breathing dust if developed.

Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

Environmental precautions

Prevent more spillage if safe to do. Avoid discharge into drains and the environment.

Arrange pick up and disposal without creating dust. Sweep up or shovel.

Store in a suitable, closed container for disposal or reclaim.

For disposal see section 13.

7. Handling and storage

Handling:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

Storage: Keep container tightly closed in a dry place.

8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any dust developed.

Exposure Limits:

Component Name, CAS#

Reference 29CFR 1910.1000 Table Z-1

ACGIH OSHA

Iron powder CAS 7439-89-6 NE NE

Ferric oxide CAS 1309-37-1 5 mg/m³ 10 mg/m³

NE= Not Established

Personal protective equipment

Respiratory protection: No requirement anticipated.

Hand protection: No requirement anticipated.

Eye protection: Safety glasses with side-shields.

Skin and body protection: No requirement anticipated.

Hygiene measures

Wash hands and face before breaks and immediately after handling the product.

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance: Dense, black powder

Odor: Nil

Odor threshold: Not available

pH-value: Not applicable

Melting point: Not available

Freezing Point: Not available

Initial boiling point: Not available

Flash point: Does not flash.

Evaporation rate: Not applicable

Flammability (solid, gas): Not applicable

Explosion limits: Not explosive

Vapor pressure: (highest partial vapor pressure) at 20°C: Not available

Vapor density: Not available

Relative density (water=1.00): Not available

Solubility: Totally soluble in water at 20°C

Partition coefficient: Log Kow = Not applicable to mixture.

Auto-ignition temperature: Not available

Decomposition temperature: Not available

Viscosity: Powder

10. Stability and reactivity

Chemical stability: No decomposition, if used according to specifications.

Possibility of hazardous reactions: Contact with water and acids will generate hydrogen gas.

Conditions to avoid: No dangerous conditions known. Humidity will rust the product.

Materials to avoid: Reacts with all acids, organic and mineral. Iron oxides are not compatible with hydrazine, calcium hypochlorite, performic acid and bromine pentafluoride.

Hazardous decomposition products: None are known. Also see Section 5.

11. Toxicological information

Acute Toxicity: No information available for finished product.

Test	Iron powder	Ferric oxide
	CAS 7439-89-6	CAS 1309-37-1
Oral Toxicity LD 50 (Rats)	7,500 mg/kg	>10 mg/kg
Dermal Toxicity LD 50 (Rabbit)	No data	No data
Inhalation Toxicity, Vapor, LC50	No data	No data
Eye Irritation (Rabbit)	Irritating	Irritating
Dermal Irritation (Rabbit)	Irritating	Irritating
Germ cell mutagenicity:	No data	No data

Carcinogenicity:

No component listed by NTP, IARC, OSHA or ACGIH as a suspect or potential carcinogen is present in this product.

Signs and Symptoms of Exposure:

Material is irritating to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms include: severe eye irritation.

12. Ecological information

There is no ecological information available for the product.

Iron

Toxicity to fish static test - Morone saxatilis - 13.6 mg/l - 96 h

Ferric oxide

No harmful effects known other than those associated with suspended inert solids in water.

Product: No data available.

Persistence and degradability:

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

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment:

PBT/ vPvB assessment not available because chemical safety assessment not required/not conducted.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. Disposal considerations

Dispose in accordance with local, state and federal regulations.

Dispose of contaminated packaging as unused product.

14. Transport information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. Regulatory information**Inventory Status:**

All components are on TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Regulations:

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

SARA (311/312) HAZARD CATEGORIES:

None

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.

Chemical Name	CAS Number	Concentration
None	Not applicable	Not applicable

The following product components are cited on the lists below:

Chemical Name	CAS Number	Right to Know (RTK) List Citations
Iron powder	CAS 7439-89-6	PA, NJ
Ferric oxide	CAS 1309-37-1	MA, PA, NJ

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other information

SDS Preparation date: October 16, 2014 Replacing SDS dated: August 20, 2014, to add item.

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference
Immediate	Yes	No	No	No	49 CFR 171.8, OSHA 29 CFR 1910.1200 and
Delayed	No	No	XXX	XXX	SARA 302/311/312/313.
HMIS Hazard ratings: Health 1 Fire 0 Instability 0 Other B (Goggles, gloves)					
Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4					

HMIS® is a registered trade and service mark of the NPCA.

Note: The information in this SDS was obtained from current reputable and competent sources.

However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.



Lynn Peavey Company
10749 W. 84th Terrace
Lenexa, KS 66214

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BY:

1. Identification

Product Name: Lynn Peavey Black Powder MSDS Number: LP BP
Item number: See "Product Codes" Product Codes: 01181, 01962, 03495, 05451, 05456, 05480,
05483, 05490, 05493, 05494, 05495, 05497, 05499, 30004,
30006, 30010, 30093, 30112, 35202, 35202NL, 55597
Product use: Helps reveal fingerprints.
Chemical Family or Formula: Mixture
Supplier: Lynn Peavey Company Phone: 913-888-0600
10749 W. 84th Terrace Fax: 913-495-6757
Lenexa, KS 66214 Email: lpv@peaveycorp.com
Product Information: 913-888-0600
Transportation Emergency: 800-424-9300 (U.S. and North America)
(703) 527-3887 (Outside U.S. collect calls accepted)

2. Hazard(s) identification

GHS Classification in accordance with 29 CFR 1910

None: Hazards do not reach threshold required for least severe of any category.

GHS Label elements, including precautionary statements

Signal word: None (Hazards do not reach threshold required for least severe category.)

Pictogram: None (Hazards do not reach threshold required for least severe category.)

Hazard statements:

Contains no hazardous substances.

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

Product contains 100% of components of unknown toxicity.

3. Composition / Information on ingredients

Chemical identity: Carbon 98%
Common name: Carbon black
Numbers of identity: CAS 1333-86-4
Impurities: None which influence classification.

4. First-aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician if there is a problem.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed: May produce eye irritation.

Indication of any immediate medical attention and special treatment needed when necessary: No data.

5. Firefighting measures

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: None known.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Wear respiratory protection. Avoid dust formation. Avoid breathing dust if developed.
Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

Environmental precautions
Prevent more spillage if safe to do. Avoid discharge into drains and the environment.
Arrange pick up and disposal without creating dust. Sweep up or shovel.
Store in a suitable, closed container for disposal or reclaim.
For disposal see section 13.

7. Handling and storage

Handling:
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

Storage: Keep container tightly closed in a dry place.

8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any dust developed.

Exposure Limits:	Reference 29CFR 1910.1000 Table Z-1
Component Name, CAS#	ACGIH
Contains no ingredients with exposure limits.	
Carbon black CAS 1333-86-4 Nuisance particles	15 ppm total dust, 5ppm respirable fraction

NE= Not Established

Personal protective equipment

Respiratory protection:	No requirement anticipated.
Hand protection:	Rubber gloves.
Eye protection:	Safety glasses with side-shields.
Skin and body protection:	Chemical resistant apron or protective suit to avoid staining.

Hygiene measures

Wash hands and face before breaks and immediately after handling the product.

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance:	Black powder	
Odor:	Nil	
Odor threshold:	Not available	
pH-value:	Not applicable	
Melting point:	Not available	
Freezing Point:	Not available	
Initial boiling point:	Not available	
Flash point:	No data.	
Evaporation rate:	Not applicable	
Flammability (solid, gas):	Not applicable	
Explosion limits:	Not explosive	
Vapor pressure:	No data.	Partition coefficient: Log Kow = No data.
Vapor density:	Not applicable	Auto-ignition temperature: Not available
Relative density (water=1.00):	Not available	Decomposition temperature: Not available
Solubility:	Nil	Viscosity: Powder

10. Stability and reactivity

Chemical stability: No decomposition, if used according to specifications.
Possibility of hazardous reactions: None known.
Conditions to avoid: No dangerous conditions known.
Materials to avoid: Strong oxidizing agents, ignition sources.
Hazardous decomposition products: None are known. Also see Section 5.

11. Toxicological information

Acute Toxicity: No information available for finished product.

Test	Carbon black
	CAS 1333-86-4
Oral Toxicity LD 50 (Rats)	No data.
Dermal Toxicity LD 50 (Rabbit)	No data.
Inhalation Toxicity, Vapor, LC50	No data.
Eye Irritation (Rabbit)	No data.
Dermal Irritation (Rabbit)	No data.
Germ cell mutagenicity:	No data.

Carcinogenicity

No component listed by NTP, IARC, OSHA or ACGIH as a suspect or potential carcinogen is present in this product at 0.1% or higher.

Signs and Symptoms of Exposure: Possible eye irritation.

12. Ecological information

There is no ecological information available for the product.

Persistence and degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available

Results of PBT and vPvB assessment:

PBT/vPvB assessment not available because chemical safety assessment not required/not conducted.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal considerations

Dispose in accordance with local, state and federal regulations.

Dispose of contaminated packaging as unused product.

14. Transport information

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

15. Regulatory information**Inventory Status:**

All components are on TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Regulations:

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
SARA (311/312) HAZARD CATEGORIES:

None

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.

Chemical Name	CAS Number	Concentration
None	Not applicable	Not applicable

The following product components are cited on the lists below:

Chemical Name	CAS Number	Right to Know (RTK) List Citations
None		

California Proposition 65:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other information

SDS Preparation date: August 18, 2014

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8, OSHA 29 CFR 1910.1200 and SARA 302/311/312/313.
Immediate	No	No	No	No	
Delayed	No	No	XXX	XXX	

HMIS Hazard ratings: Health 0 Fire 0 Instability 0 Other B (Goggles, gloves)

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

HMIS® is a registered trade and service mark of the NPCA.

Note: The information in this SDS was obtained from current reputable and competent sources. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.

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01940

Safety Data Sheet**LP Dual Use Fingerprint Powder BY:****Section 1 - Company and Product Identification****LYNN PEAVEY COMPANY**

Product name: LP Dual Use Fingerprint Powder
 Product number: 01940,01187,03511,05464,05481,05485,05511,
 05513,05515,30005,30044,30110,55588

General use: Reveal latent fingerprints

Product description: Grey/ black powder

Manufacturer's name: Date prepared: May 14, 2013
 Lynn Peavey Company Supersedes: All

Address: Information number: 913-888-0600
 10749 W. 84th Terrace St.

City, State, Zip: Emergency number: (800) 424-9300 (U.S. and North America)
 Lenexa, KS 66214 (703) 527-3887 (Outside - U.S. Collect Calls Accepted)

Section 2 - Hazard Identification

Classification of the substance or mixture	Skin, inhalation, and eye irritant
--	------------------------------------

GHS label elements

Hazard Pictogram	
Signal word	Irritant
Hazard statements	H316 Causes mild skin irritation H320 Causes eye irritation P261 Avoid breathing dust/fume/gas/mist/vapors/spray P404 Store in a closed container
Precautionary statements	Avoid dust in eyes.
Prevention	Keep container lid closed
Response	No emergency response required
Storage	High temperature and high humidity storage may shorten the useful life of the product.
Disposal	Should be disposed of in accordance with local, state and federal regulations.
Other unclassified hazards	Avoid breathing dust.

Section 3 - Composition/Ingredient Identification

Hazardous Components	CAS#	EINECS#	% by weight	OSHA PEL ppm mg/m ³	ACGIH TWA ppm mg/m ³	RQ lbs.
Gum Arabic	9000-01-5	232-519-5	27.38	360 mg/m ³	180 mg/m ³	None
Carbon Black	1333-86-4	215-609-9	5.20	3.5 mg/m ³	3.5 mg/m ³	None
Mica	12001-26-2	310-127-6	58.78	3 mg/m ³	3 mg/m ³	None
Manganese Dioxide	1313-13-9	None	2.60	0.2 mg/m ³	5 mg/m ³	None
Aluminum	7429-90-5	231-072-3	6.00	15 mg/m ³	10 mg/m ³	None

There are no additional ingredients present which, in the knowledge of the supplier and in the present concentrations, are hazardous to the health or environment and therefore require reporting in this section.

Safety Data Sheet
LP Dual Use Fingerprint Powder

Section 4 - First Aid Measures

Description of necessary First Aid measures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart.
Skin contact	Flush skin with water for 15 minutes and remove contaminated clothing. Wash clothing before reuse.
Inhalation	Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate. Seek medical attention if breathing becomes difficult.
Ingestion	No need for first aid is anticipated if a small amount of material is swallowed. See section 3. For large amounts, give 3-4 cups of water or milk. Never give anything by mouth to an unconscious person. In severe cases, do not induce vomiting. Call a physician.
Most important effects, symptoms – acute and delayed	
Eye contact	Irritation on contact
Skin contact	Possible irritation. Seek medical attention if irritation continues.
Inhalation	Prolonged exposure may cause irritation.
Ingestion	Possible irritation. Seek medical attention if irritation continues.
Overexposure signs/symptoms	
Eye contact	Irritation, redness
Skin contact	Irritation on contact
Inhalation	Coughing, gagging possible
Ingestion	Stomach discomfort. (Unlikely occurrence.)
Indications of need of medical attention and special treatment	
Notes to Physician	Not needed unless large amounts inhaled or ingested
Specific treatments	Large amounts of ingested materials may need to be diluted with 3-4 cups of milk.
Protection of First Aid providers	None required.
See Section 11 – Toxicological Information	

Section 5 - Fire Fighting Measures

Extinguishing media	
Suitable	Smother with dry powder or sand.
Unsuitable	Do NOT use water or halogenated extinguishing media.
Specific hazards	Moderate explosion hazard in the form of dust when exposed to flame or heat.
Hazardous thermal decomposition products	None
Special protective actions for fire fighters	None
Special protective equipment for fire fighters	None

Section 6 - Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures	
Non-emergency personnel	No problems anticipated.
First responders	Not soluble in water.
Environmental procedures	These materials are not soluble in water. Contain all liquid for treatment and/or disposal.

Methods and materials for containment and clean up	
Spill	Notify all downstream users of possible contamination. Avoid discharge into surface waters and storm sewers.

Section 7 - Handling and Storage

Precautions for safe handling	Avoid creating or breathing dust. Empty containers may be discarded without hazard.
Conditions for safe storage; including incompatibilities	Keep container closed. Store in a cool area for longer useful product life.

Safety Data Sheet
LP Dual Use Fingerprint Powder

Section 8 - Exposure Controls/Personal Protection

Control parameters	
Occupational exposure limits	General exhaust ventilation is usually enough.
Recommended monitoring procedures	None required.
Appropriate engineering controls	None required.
Environmental exposure controls	None required
Individual protection measures	
Hygiene measures	None required
Eye/face protection	None required
Hand protection	None required
Body protection	None required
Other skin protection	None required
Respiratory protection	None required

Section 9 - Physical and Chemical Properties

Physical state	Powder
Color	Grey/ black
Odor	None
Odor threshold	Not determined
pH	Not Applicable
Melting point/freezing point	Not Applicable
Boiling point/range	Not Applicable
Flash point	Not Applicable
Evaporation rate	Not Applicable
Flammability (solid, liquid)	Will burn if ignited
Lower and upper explosive (flammable) limits	Not determined
Vapor pressure	Not determined
Vapor density	Not determined
Relative density	No data
Solubility	Not soluble in water
Partition coefficient: n octanol/water	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
SADT	Not determined
Viscosity	Powder

Section 10 - Stability and Reactivity

Reactivity	Stable
Chemical stability	Solvents may soften or dissolve filler. Water, acids and alkalis will react with metal powder.
Possibility of hazardous reactions	Very low.
Conditions to avoid	High temperature and high humidity storage may shorten the useful life of the product.
Incompatible materials	None
Hazardous decomposition products	None

Safety Data Sheet
LP Dual Use Fingerprint Powder
Section 11 - Toxicological Information

Information on toxicological effects

Acute toxicity

Ingredient name	Result	Species	Dose	Exposure
Gum Arabic	Minor irritation	Rat	>16001 mg/kg	Oral
Carbon Black	Minor irritation	Rat	>10000 mg/kg (rat)	Oral
Mica	Minor irritation	Rabbit	>10g/kg	Oral
Manganese Dioxide	Minor irritation	Rat	>15400 mg/kg	Oral
Aluminum	Not determined	None	Not Determined	None

Product Irritant/Corrosion

Product name	Result	Species	Dose	Exposure	Observation
Mica	Minor irritation	Rabbit	10g/kg	Oral	None
Sensitization					None found for any ingredient
Mutagenicity					None found for any ingredient
Carcinogenicity					None found for any ingredient
Reproductive toxicity					None found for any ingredient
Teratogenicity					None found for any ingredient
Specific target organ toxicity (single exposure)					None found for any ingredient
Specific target organ toxicity (repeated exposure)					None found for any ingredient
Aspiration hazard					Dust is considered a nuisance.
Likely routes of exposure					Inhalation, skin contact

Potential acute health effects

Eye contact	Irritation
Skin contact	Irritation
Inhalation	Dust is considered a nuisance.
Ingestion	None

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact	Irritation
Skin contact	Irritation
Inhalation	Dust is considered a nuisance.
Ingestion	None

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

Short term exposure

Possible immediate effects	Irritation
Possible delayed effects	None

Long term exposure

Possible immediate effects	Irritation
Possible delayed effects	None

Potential chronic health effects

General	None
Carcinogenicity	None
Mutagenicity	None
Teratogenicity	None
Developmental effects	None
Fertility effects	None

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
None	None
None	None

Safety Data Sheet
LP Dual Use Fingerprint Powder

Section 12 - Ecological Information**Toxicity**

Ingredient name	Result	Species	Exposure
Gum Arabic	Minor irritation	Rat	16001 mg/kg
Carbon Black	Minor irritation	Rat	10000 mg/kg (rat)
Mica	Minor irritation	Rabbit	10g/kg
Manganese Dioxide	Minor irritation	Rat	>15400 mg/kg
Aluminum	Not determined	None	Not Determined

Persistence and degradability

No data

Bio accumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Aluminum	No Data	No Data	No Data
Manganese Dioxide	No Data	No Data	No Data

Mobility in Soil

Soil/water partition coefficient (K _{oc})	None
Other adverse effects	None

Section 13 - Disposal Considerations

Disposal methods Dispose of according to local, state, and federal regulations.

Section 14 - Transportation Information

	DOT
UN number	Not regulated
UN proper shipping name	Not applicable
Transport Hazard Class(es)	None
Packing group	None
Environmental hazards	None
Special user precautions	None
Additional Information	None

Section 15 - Regulatory Information

Safety, health and environmental regulations specific to this product	None
US Federal regulations	None applicable
Clean Air Act - Section 112 Hazardous Air Pollutants (HAPs)	None
Clean Air Act - Section 602 Class I substances	None
Clean Air Act- Section 602 Class II substances	None
DEA list I chemicals (precursor chemicals)	None
DEA list II chemicals (essential chemicals)	None

State regulations (Right to Know)

Massachusetts	On list: Aluminum, Carbon Black, Gum Arabic, Manganese Dioxide, Mica	CAS#: 231-072-3, 1333-86-4, 9000-01-5, 1313-13-9, 12001-26-2
New York	On List: Aluminum, Manganese Dioxide	CAS#: 231-072-3, 1313-13-9
New Jersey	On list: Aluminum, Carbon Black, Mica	CAS#: 231-072-3, 1333-86-4, 12001-26-2
Pennsylvania	On list: Aluminum, Carbon Black, Manganese Dioxide, Mica	CAS#: 231-072-3, 1333-86-4, 1313-13-9, 12001-26-2
California Prop. 65	On list: None	CAS#: None

Safety Data Sheet
LP Dual Use Fingerprint Powder

Section 16 - Other Information

History

Date of Issue	May 14, 2013
Version	2

Prepared by Solvent Engineering, 2455 N. Tamarack Trail, #126 Bloomington IN, 47408

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of this product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Lynn Peavey Company assumes no responsibility for injury to vendee or third persons proximately caused by the material since conditions of use are beyond vendor's control. Furthermore, vendor assumes no responsibility for injury caused by since conditions of use are beyond vendor's. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

LP Grey Fingerprint Powder Safety Data Sheet

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Lynn Peavey Company
10749 W. 84th Terrace
Lenexa, KS 66214

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BY:

1. Identification

Product Name:	Lynn Peavey Grey Fingerprint Powder	MSDS Number:	LP GFP
Item number:	See "Product Codes"	Product Codes:	01182, 01942
Product use:	Helps reveal fingerprints.	05482, 05484, 05501, 05503	05505, 30007, 56019
Chemical Family or Formula:	Mixture	Phone:	913-888-0600
Supplier:	Lynn Peavey Company 10749 W. 84th Terrace Lenexa, KS 66214	Fax:	913-495-6757
Product Information:	913-888-0600	Email:	lpv@peaveycorp.com
Transportation Emergency:	800-424-9300 (U.S. and North America) (703) 527-3887 (Outside U.S. collect calls accepted)		

2. Hazard(s) identification

GHS Classification in accordance with 29 CFR 1910.1200:
Carcinogenicity (Category 2), H351 Suspected of causing cancer.
GHS Label elements, including precautionary statements
Pictogram



Signal word: Warning

Hazard statements:

H351 Suspected of causing cancer.

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P281 Use personal protective equipment as required.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

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

3. Composition / Information on ingredients

Chemical identity:	Titanium (IV) oxide	58%
Common name:	Titanium dioxide	
Numbers of identity:	CAS 13462-67-7	EC 236-675-5
Chemical identity:	Graphite	
Common name:	Graphite	
Numbers of identity:	CAS 7782-42-5	EC 231-955-3
Impurities:	None which influence classification	

4. First-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of danger.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

4. First-aid measures (continued)

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: Severe eye irritation.

Indication of any immediate medical attention and special treatment needed when necessary: No data.

5. Firefighting measures

Suitable extinguishing media: Product is not flammable. Use media appropriate to main cause of fire.

Examples: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: More iron oxides formed.

Advice for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Avoid dust formation. Avoid breathing dust if developed.

Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent more spillage if safe to do. Avoid discharge into drains and the environment.

Arrange pick up and disposal without creating dust. Sweep up or shovel.

Store in a suitable, closed container for disposal or reclaim. For disposal see section 13.

7. Handling and storage

Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

Storage: Keep container tightly closed in a dry place.

8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any dust developed.

Exposure Limits: Reference 29CFR 1910.1000 Table Z-1

Component Name, CAS#	ACGIH	OSHA
Titanium dioxide CAS 13462-67-7	10 mg/m ³	15 mg/m ³
Graphite CAS 7782-42-5	2 mg/m ³	10 mg/m ³

Personal protective equipment (as appropriate):

Respiratory protection: No requirement anticipated.

Hand protection: Rubber gloves.

Eye protection: Safety glasses with side-shields.

Skin and body protection: Chemical resistant apron or protective suit if splashing or repeated contact with solution is likely.

Hygiene measures

Wash hands and face before breaks and immediately after handling the product.

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance:	Grey powder	
Odor:	Nil	
Odor threshold:	Not available	
pH-value:	Not applicable	
Melting point:	Not available	
Freezing Point:	Not available	
Initial boiling point:	Not available	
Flash point:	Does not flash.	Relative density (water=1.00): Not available
Evaporation rate:	Not applicable	Solubility: Totally soluble in water at 20°C
Flammability (solid, gas):	Not applicable	Partition coefficient: Log Kow = Not applicable to mixture.
Explosion limits:	Not explosive	Auto-ignition temperature: Not available
Vapor pressure:	Not available	Decomposition temperature: Not available
Vapor density:	Not available	Viscosity: Powder

10. Stability and reactivity

Chemical stability: No decomposition, if used according to specifications.

Possibility of hazardous reactions: None known.

Conditions to avoid: No dangerous conditions known.

Materials to avoid: None known.

Hazardous decomposition products: None are known. Also see Section 5.

11. Toxicological information

Acute Toxicity: No information available for finished product.

Test	Titanium dioxide	Graphite
Oral Toxicity LD 50 (Rats)	CAS 13462-67-7 >10,000 mg/kg	CAS 7782-42-5 >2,000 mg/kg
Dermal Toxicity LD 50 (Rabbit)	>10,000 mg/kg	No data
Inhalation Toxicity, LC50	No data	2,000 mg/m ³ 4h
Eye Irritation (Rabbit)	No eye irritation	None
Dermal Irritation (Rabbit)	Mild- 3h	None
Germ cell mutagenicity:	No data	Negative

Carcinogenicity:

No component of this product present at levels equal to or greater than 0.1% is identified as probable, possible or confirmed human carcinogen by NTP, IARC, OSHA, or ACGIH

Signs and Symptoms of Exposure:

Material is irritating to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms may include: skin or eye irritation.

12. Ecological information

There is no ecological information available for the product.

Titanium dioxide

Toxicity to fish LC50 - other fish - > 1,000 mg/l - 96 h

Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 48 h
other aquatic invertebrates

EC0 - Daphnia magna (Water flea) - 1,000 mg/l - 48 h

Graphite

Toxicity to fish LC50: Danio rerio (zebra fish) - > 100 mg/l - 96 h

Toxicity to daphnia EC50: Daphnia magna (Water flea) - > 100 mg/l - 48 h

12. Ecological information (continued)

Product: No data available.

Persistence and degradability:

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

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment: Not available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. Disposal considerations

Dispose in accordance with local, state and federal regulations.

Dispose of contaminated packaging as unused product.

14. Transport information

DOT (US) Not dangerous goods

IMDG Not dangerous goods

IATA Not dangerous goods

15. Regulatory information

Inventory Status:

All components are on TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Regulations:

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

SARA (311/312) HAZARD CATEGORIES:

None

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.

Chemical Name	CAS Number	Concentration
None	Not applicable	Not applicable

The following product components are cited on the lists below:

Chemical Name	CAS Number	Right to Know (RTK) List Citations
Titanium dioxide	CAS 13462-67-7	MA, PA, NJ

Graphite	CAS 7782-42-5	MA, PA, NJ
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California Proposition 65

WARNING: This product may contain a chemical known to the State of California to cause cancer and birth defects or other reproductive harm: Titanium dioxide CAS 13462-67-7

Titanium dioxide, nanoparticles range in size from 1 to 150 nm

16. Other Information

SDS Preparation date: October 9, 2014

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8, OSHA 29 CFR 1910.1200 and SARA 302/311/312/313.
Immediate	Yes	No	No	No	
Delayed	No	No	XXX	XXX	

HMIS Hazard ratings: Health 1 Fire 0 Instability 0 Other B (Goggles, gloves)

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

HMIS® is a registered trade and service mark of the NPCA.

Note: The information in this SDS was obtained from current reputable and competent sources.

However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.

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Selenous acid

BY:

sc-255610



The Power to Discover

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Selenous acid

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Company: Santa Cruz Biotechnology, Inc.

Address:

2145 Delaware Ave
Santa Cruz, CA 95060

Telephone: 800.457.3801 or 831.457.3800

Emergency Tel: CHEMWATCH: From within the US and Canada:
877-715-9305

Emergency Tel: From outside the US and Canada: +800 2436
2255 (1-800-CHEMCALL) or call +613 9573 3112

PRODUCT USE

Laboratory reagent for alkaloids; oxidising agent.

SYNOMYS

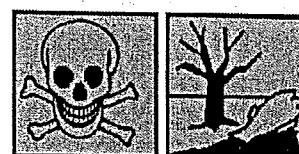
H₂O₃-Se, "selenous acid", "seleneous acid", "monohydrated selenium dioxide"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	1
Toxicity:	4	5
Body Contact:	2	3
Reactivity:	0	1
Chronic:	2	3

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Danger of cumulative effects.

Toxic by inhalation and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.
- Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.
- fatal if swallowed unless immediate treatment is applied.
- Acute effects of selenium poisoning include nervousness, convulsions, drowsiness, frontal headaches, and in extreme cases, death from respiratory depression. There may also be skin eruptions, tiredness, stomach upset, discolouration of teeth, an odorous garlic breath and loss of hair and nails. Selenium is rapidly absorbed in the gut and accumulates in the liver and kidneys. Selenates and selenites cause damage to the kidney, heart, spleen, stomach and bowel. Selenites might increase the rate of miscarriage.

EYE

- Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

SKIN

- The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
- Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- Inhalation of dusts, generated by the material, during the course of normal handling, may produce toxic effects.
- The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

- Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.
- Chronic exposure to selenium and its compounds irritate the bronchi, cause gastrointestinal problems, irritation of the nasopharynx and a persistent foul garlic breath. There is often metallic tastes, pallor, irritability, extreme tiredness after years of exposure. Occasionally kidney and liver damage can occur. Selenium can cause tooth decay.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
selenious acid	7783-00-8	>98
in air may form		
<u>selenic acid</u>	7783-08-6	

Section 4 - FIRST AID MEASURES

SWALLOWED

-

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
 - Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
 - For advice, contact a Poisons Information Center or a doctor.
 - Urgent hospital treatment is likely to be needed.
 - If conscious, give water to drink.
 - INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- NOTE: Wear a protective glove when inducing vomiting by mechanical means.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
 - If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
 - If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

EYE

- If this product comes in contact with the eyes:
 - Immediately hold eyelids apart and flush the eye continuously with running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
 - Transport to hospital or doctor without delay.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
 - Immediately remove all contaminated clothing, including footwear
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- - If fumes or combustion products are inhaled remove from contaminated area.
 - Lay patient down. Keep warm and rested.
 - Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
 - Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
 - Transport to hospital, or doctor, without delay.

NOTES TO PHYSICIAN

- - Selenium dusts produce respiratory tract irritation, manifested by nasal discharge, loss of smell, epistaxis, and cough. Consumption of selenites and to a lesser degree, selenates causes nausea, vomiting, abdominal pain and tremor which resolves in 24 hrs. Muscle tenderness, tremor, light-headedness and facial flushings are observed in selenite poisoning.
 - Both the acid and elemental form are well absorbed through the lungs and gastro-intestinal tract. Elimination (mostly in the urine) results in a biological half-life of around 1.2 days.
 - Chronic selenium poisoning resembles arsenic poisoning. Management of chronic intoxication is supportive with elimination of the selenium source. BAL and CaNa2EDTA may enhance toxicity.
 - High dose vitamin C (several grams daily) has produced equivocal results. This is probably reasonable as in-vitro results indicate selenium salts are then reduced to poorly absorbed elemental selenium.
- Management of chronic selenium intoxication is supportive with elimination of the selenium source. BAL (dimercaprol, 2,3-dimercaptopropanol) and CaNa2EDTA may enhance toxicity. There are no antidotes to selenious acid toxicity; treatment is expectant (cardiopulmonary monitoring in an intensive care setting) and supportive (intravenous infusion, supplemental oxygen and ventilation as needed).

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	1.95 @ 15 C
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1)	3.004
Lower Explosive Limit (%):	Not applicable

EXTINGUISHING MEDIA

- - Water spray or fog.
 - Foam.
 - Dry chemical powder.

- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

-
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

-
- Will not burn but increases intensity of fire.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- Heat affected containers remain hazardous.
- Contact with combustibles such as wood, paper, oil or finely divided metal may cause ignition, combustion or violent decomposition.
- May emit irritating, poisonous or corrosive fumes.

Decomposition may produce toxic fumes of: metal oxides.

May emit poisonous fumes.

FIRE INCOMPATIBILITY

- None known.

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

Respirator:

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

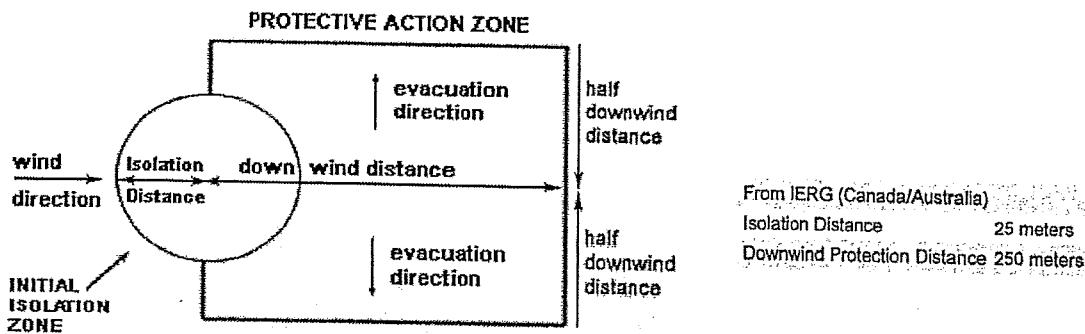
MINOR SPILLS

-
- Clean up all spills immediately.
- No smoking, naked lights, Ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials; as ignition may result.
- Avoid breathing dust or vapors and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite
- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labeled drums for disposal.
- Neutralize/decontaminate area.

MAJOR SPILLS

-
- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labeled containers for recycling.
- Neutralize/decontaminate residue.
- Collect solid residues and seal in labeled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

PROTECTIVE ACTIONS FOR SPILL



From US Emergency Response Guide 2000 Guide 151

FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.

3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills". LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide 151 is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

ACUTE EXPOSURE GUIDELINE LEVELS (AEGL) (in ppm)

AEGL 1: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL 2: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL 3: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapors.
- Provide adequate ventilation.
- Always wear protective equipment and wash off any spillage from clothing.
- Keep material away from light, heat, flammables or combustibles.
- Keep cool, dry and away from incompatible materials.
- Avoid physical damage to containers.
- DO NOT repack or return unused portions to original containers.
- Withdraw only sufficient amounts for immediate use.
- Contamination can lead to decomposition leading to possible intense heat and fire.
- When handling NEVER smoke, eat or drink.
- Always wash hands with soap and water after handling.
- Use only good occupational work practice.
- Observe manufacturer's storing and handling directions.

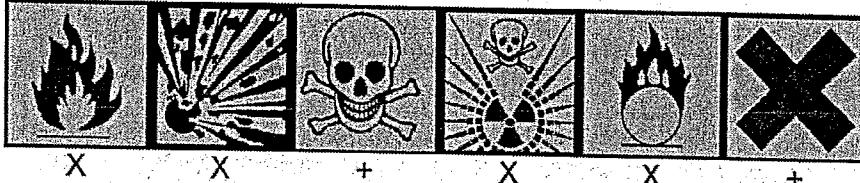
RECOMMENDED STORAGE METHODS

- Lined metal can, Lined metal pail/drum
 - Plastic pail
 - Polyliner drum
 - Packing as recommended by manufacturer.
 - Check all containers are clearly labeled and free from leaks.
- For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
 - Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):
- Removable head packaging;
 - Cans with friction closures and
 - low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages *. - In addition, where inner packagings are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage *. - * unless the outer packaging is a close fitting molded plastic box and the substances are not incompatible with the plastic. All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X: Must not be stored together

O: May be stored together with specific preventions

+: May be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - British Columbia Occupational Exposure Limits	selenious acid (Selenium and compounds, as Se)				0.1				
US - Minnesota Permissible Exposure Limits (PELs)	selenious acid (Selenium compounds (as Se))				0.2				
US OSHA Permissible Exposure Levels (PELs) - Table Z1	selenious acid (Selenium compounds (as Se))				0.2				
Canada - Alberta Occupational Exposure Limits	selenious acid (Selenium and compounds, as Se)				0.2				
US - California Permissible Exposure Limits for Chemical Contaminants	selenious acid (Selenium compounds, as Se)				0.2				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air	selenious acid (Selenium compounds (as Se))				0.2				

Contaminants			
US - Vermont Permissible Exposure Limits Table Z-1-A	selenious acid (Selenium compounds (as Se))	0.2	
Final Rule Limits for Air Contaminants			
US - Idaho - Limits for Air Contaminants	selenious acid (Selenium compounds (as Se))	0.2	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	selenious acid (Selenium compounds (as Se))	0.2	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	selenious acid (Selenium and compounds, (as Se))	0.2	0.6
US - Hawaii Air Contaminant Limits	selenious acid (Selenium compounds (as Se))	0.2	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	selenious acid (Selenium compounds (as Se))	0.2	0.2
US - Washington Permissible exposure limits of air contaminants	selenious acid (Selenium compounds (as Se))	0.2	0.6
US - Alaska Limits for Air Contaminants	selenious acid (Selenium compounds (as Se))	0.2	
Canada - Nova Scotia Occupational Exposure Limits	selenious acid (Selenium - Compounds (as Se))	0.2	TLV Basis: eye & upper respiratory tract irritation
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	selenious acid (Selenium and compounds (as Se))	0.2	
US - Michigan Exposure Limits for Air Contaminants	selenious acid (Selenium compounds (as Se))	0.2	
Canada - Northwest Territories Occupational Exposure Limits (English)	selenious acid (Selenium compounds (as Se))	0.2	0.6
Canada - Ontario Occupational Exposure Limits	selenious acid (Selenium and its compounds except selenium hexafluoride and hydrogen selenide (as selenium))	0.2	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	selenious acid (Selenium compounds (as Se))	0.2	
US ACGIH Threshold Limit Values (TLV)	selenious acid (Selenium - Compounds (as Se))	0.2	TLV Basis: eye & upper respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	selenious acid (Selenium compounds (as Se))	0.2	
Canada - Prince Edward Island Occupational Exposure Limits	selenious acid (Selenium - Compounds (as Se))	0.2	TLV Basis: eye & upper respiratory tract irritation
Canada - British Columbia Occupational Exposure Limits	selenic acid (Selenium and compounds, as Se)	0.1	
US - Minnesota Permissible Exposure Limits (PELs)	selenic acid (Selenium compounds (as Se))	0.2	

US OSHA Permissible Exposure Levels (PELs) - Table Z1	selenic acid (Selenium compounds (as Se))	0.2	
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Canada - Prince Edward Island Occupational Exposure Limits	selenic acid (Selenium Compounds (as Se))	0.2	TLV Basis: eye & upper respiratory tract irritation

EMERGENCY EXPOSURE LIMITS

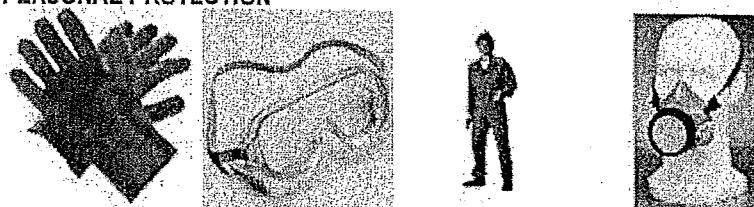
Material	selenious acid
Original IDLH Value (ppm)	selenic acid
Original IDLH Value (ppm)	

MATERIAL DATA

SELENIC ACID:

- There is extensive evidence of selenium poisoning as a result of ingestion of seleniferous grains and other foodstuffs. There have however been no reports of disabling disease or death from industrial exposures. The recommended TLV-TWA is thought to provide protection against systemic toxicity and minimize the potential for ocular and upper respiratory tract irritation. IARC have classified selenium and its compounds as Group 3: Not classifiable as to their carcinogenicity to humans.

PERSONAL PROTECTION



Consult your EHS staff for recommendations

EYE

-
- Safety glasses with side shields
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

-
- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

RESPIRATOR

-
- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory . These may be government mandated or vendor recommended.

- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

RESPIRATOR



Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
10 x PEL	P1		PAPR-P1
	Air-line*		
50 x PEL	Air-line**	P2	PAPR-P2
100 x PEL		P3	PAPR-P3
	Air-line*		
100+ x PEL		Air-line**	

* - Negative pressure demand ** - Continuous flow

Explanation of Respirator Codes:

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

ENGINEERING CONTROLS

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection an approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:

solvent, vapors, degreasing etc., evaporating from tank (in still air). 0.25-0.5 m/s (50-100 f/min.)

aerosols, fumes from pouring operations, Intermittent container filling, low speed conveyor transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) 0.5-1 m/s (100-200 f/min.)

direct spray, spray painting in shallow booths, drum filling, conveyor loading, crushed dusts, gas discharge (active generation into zone of rapid air motion) 1-2.5 m/s (200-500 f/min.)

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion) 2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favorable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air

Air Speed:

0.5-1 m/s (100-200 f/min.)

1-2.5 m/s (200-500 f/min.)

2.5-10 m/s (500-2000 f/min.)

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood-local control only

velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.			
Mixes with water.			
State	Divided solid	Molecular Weight	128.98
Melting Range (°F)	158 Decomposes	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not applicable	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not available
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	1.95 @ 15 C
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	3.004
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Nil @ 37 C	Evaporation Rate	Non Volatile

APPEARANCE

White deliquescent crystalline powder; mixes with water giving weakly acid solutions. Gives off water when heated and selenium oxide sublimes. K1 = 0.0024; K2 = 4.8 x 10-9

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

STORAGE INCOMPATIBILITY

- Selenious acid:
 - reacts with air to give selenium oxide and water
 - reacts with oxidisers, forming selenite acid, and with reducing agents, forming selenium
 - aqueous solutions are incompatible with sulfuric acid, caustics, ammonia, aliphatic amines, alkylamines, amides, organic anhydrides, isocyanates, vinyl acetate, alkylene oxides, epichlorohydrin

Metals and their oxides or salts may react violently with chlorine trifluoride. Chlorine trifluoride is a hypergolic oxidizer. It ignites on contact (without external source of heat or ignition) with recognized fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. The state of subdivision may affect the results.
Avoid storage with reducing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

SELENIOUS ACID

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 25 mg/kg

Intraperitoneal (rat) LDLo: 10 mg/kg

Intravenous (mouse) LD50: 11 mg/kg

IRRITATION

Nil Reported

CARCINOGEN

Selenium and selenium compounds	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
Selenious acid	ND	Carcinogenicity	D
Selenious acid	ND	Carcinogen Category	D

SELENIUM COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	EPA-HEN
Selenium and Compounds	ND	Carcinogenicity	D
Selenium and Compounds	ND	Carcinogen Category	D

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

SELENIC ACID:

SELENIOS ACID:

■ DO NOT discharge into sewer or waterways.

■ Feeding of plants from seleniferous rocks has been the cause of toxic effects in livestock. Environmental redistribution of selenium due to man's activity is due copper smelting; lead, zinc, phosphate, and uranium mining; manufacture of glass ceramics and pigments; and burning of fuels.

Early concerns about selenium toxicity have given way to recognition of certain beneficial properties. Selenium is thought to possess some anti-carcinogenic activity and to protect against the toxicity of heavy metals such as cadmium, mercury and silver. Sediment micro-organisms produce dimethyl selenide and dimethyl diselenide from both inorganic and organic sources and contribute to its biogeochemical cycling.

■ Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or sorb to solid particles in aquatic or aqueous media. A significant proportion of dissolved/sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.

When released to dry soil most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/or surface water ecosystems when soaked by rain or melt ice. Environmental processes may also be important in changing solubilities.

Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects.

A metal ion is considered infinitely persistent because it cannot degrade further.

The current state of science does not allow for an unambiguous interpretation of various measures of bioaccumulation.

The counter-ion may also create health and environmental concerns once isolated from the metal. Under normal physiological conditions the counter-ion may be essentially insoluble and may not be bioavailable.

Environmental processes may enhance bioavailability.

■ Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

■ Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SELENIOS ACID:

Marine Pollutant Yes

SELENIC ACID:

Marine Pollutant Yes

■ Prevent, by any means available, spillage from entering drains or watercourses.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Toxicity characteristic: use EPA hazardous waste number D010 (waste code E) if this substance, in a solid waste, produces an extract containing greater than 1 mg/L of selenium.

B. Component Waste Numbers

When selenious acid is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U204 (waste code T).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

■ Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and

recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
- Recycle wherever possible or consult manufacturer for recycling options.
 - Consult Waste Management Authority for disposal.
 - Bury residue in an authorized landfill.
 - Recycle containers where possible, or dispose of in an authorized landfill.

Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: None

Identification Numbers: UN3283

Label Codes: 6.1

Packaging: Exceptions: 153

Packaging: Exceptions: 153

Quantity Limitations: Cargo aircraft only: 100 kg

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:
Selenium compound, solid, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 6.1

UN/ID Number: 3283

Special provisions: A3

Shipping Name: SELENIUM COMPOUND, SOLID, N.O.S.(CONTAINS SELENIOUS ACID)

Maritime Transport IMDG:

IMDG Class: 6.1

UN Number: 3283

EMS Number: F-A, S-A

Limited Quantities: 500 g

Shipping Name: SELENIUM COMPOUND, SOLID, N.O.S.(contains selenious acid)

Hazard class or Division: 6.1

PG: II

Special provisions: IB8, IP2, IP4, T3, TP33

Packaging: Non-bulk: 212

Quantity limitations: Passenger aircraft/rail: 25 kg

Vessel stowage: Location: B

ICAO/IATA Subrisk: None

Packing Group: II

IMDG Subrisk: None

Packing Group: II

Special provisions: None

Marine Pollutant: Yes

Section 15 - REGULATORY INFORMATION



REGULATIONS

ND

Ingredient	CAS	% de minimus concentration
selenic acid	7783-08-6	(1.0)

ND

Ingredient	CAS	RQ
selenic acid	7783-08-6	**

selenious acid (CAS: 7783-00-8,11140-60-6) is found on the following regulatory lists:

"Canada - Saskatchewan Industrial Hazardous Substances", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (French)", "US - Massachusetts Oil & Hazardous Material List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US - Vermont Hazardous Constituents", "US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either", "US - Washington Discarded Chemical Products List - ""U" Chemical Products", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELS)", "US EPA Carcinogens Listing", "US List of Lists - Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act", "US RCRA (Resource Conservation & Recovery Act) - Wastes", "US SARA Section 302 Extremely Hazardous Substances", "US Toxic Substances Control Act (TSCA) - Inventory"

selenic acid (CAS: 7783-08-6) is found on the following regulatory lists:

"Canada Non-Domestic Substances List (NDSL)", "US - New Jersey Right to Know Hazardous Substances", "US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 OTHER INFORMATION

LIMITED EVIDENCE

- Skin contact may produce health damage*.
* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name	CAS
selenious acid	7783-00-8, 11140-60-6

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- Classification of the mixture and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.
- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Apr-24-2009

Print Date: Sep-8-2010



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Material Safety Data Sheet Stannous chloride, dihydrate

BY:

Section 1 - Chemical Product and Company Identification

MSDS Name:
Stannous chloride, dihydrate
Catalog Numbers:
LC25170
Synonyms:
Tin (II) chloride dihydrate
Company Identification:
LabChem, Inc.
200 William Pitt Way
Pittsburgh, PA 15238
Company Phone Number:
(412) 826-5230
Emergency Phone Number:
(800) 424-9300
CHEMTREC Phone Number:
(800) 424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
10025-69-1	Tin (II) Chloride Dihydrate	>98

Section 3 - Hazards Identification

Emergency Overview

Appearance: Colorless to white solid.

Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. Harmful if swallowed. May cause blood abnormalities. May cause liver and kidney damage. Moisture sensitive.

Target Organs: Respiratory system, eyes, skin.

Potential Health Effects

Eye:

Causes eye burns.

Skin:

Causes skin burns. Causes redness and pain. May be harmful if absorbed through the skin.

Ingestion:

Harmful if swallowed. Causes gastrointestinal tract burns. Exposure may cause anemia and other blood abnormalities. May cause headache, nausea, fatigue, and dizziness. Inorganic tin salts may cause systemic effects on the central nervous system, heart and liver.



Material Safety Data Sheet

Stannous chloride, dihydrate

Inhalation:

Irritation may lead to chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract. May cause effects similar to those described for ingestion. May be harmful if inhaled.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. Adverse reproductive effects have been reported in animals. Chronic exposure may cause effects similar to those of acute exposure.

Section 4 - First Aid Measures

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed.

Skin:

Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature:

Not applicable.

Flash Point:

Not applicable.

NFPA Rating:

CAS# 10025-69-1: Health: 3; Flammability: 0; Instability: 1

Explosion Limits:

Lower: n/a Upper: n/a



Material Safety Data Sheet Stannous chloride, dihydrate

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Use with adequate ventilation. Discard contaminated shoes.

Storage:

Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Stannous chloride, dihydrate	2 mg/m ³ TWA (except tin hydride, as Sn) (listed under Tin inorganic compounds).	2 mg/m ³ TWA (as Sn, except Tin oxide) (listed under Tin inorganic compounds).	2 mg/m ³ TWA (as Sn) (listed under Tin inorganic compounds).

OSHA Vacated PELs: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.



Material Safety Data Sheet

Stannous chloride, dihydrate

Section 9 - Physical and Chemical Properties

Physical State:	Solid
Color:	Colorless to white
Odor:	Odorless
pH:	Not available.
Vapor Pressure:	Negligible
Vapor Density:	Not applicable
Evaporation Rate:	Negligible
Viscosity:	Not applicable
Boiling Point:	Decomposes
Freezing/Melting Point:	100° F
Decomposition Temperature:	Not available
Solubility in water:	Decomposes in water
Specific Gravity/Density:	2.7
Molecular Formula:	SnCl ₂ .2H ₂ O
Molecular Weight:	225.62

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures. May decompose on exposure to moist air or water.
Moisture sensitive.

Conditions to Avoid:

Moisture, heating to decomposition.

Incompatibilities with Other Materials:

Metals, strong oxidizing agents, strong reducing agents, strong acids, strong bases, bromine trifluoride, ethylene oxide, potassium, hydrogen peroxide, sodium, moisture, calcium carbide, hydrazine hydrate, organic nitrates.

Hazardous Decomposition Products:

Hydrogen chloride, chlorine, tin/tin oxides.

Hazardous Polymerization:

Has not been reported

Section 11 - Toxicological Information

RTECS:

CAS# 10025-69-1: XP8850000

LD50/LC50:

CAS# 10025-69-1:

Oral, rat: LD50 = 2274.6 mg/Kg;

Oral, rat: LD50 = 700 mg/Kg

Carcinogenicity:

CAS# 10025-69-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

No information found



Material Safety Data Sheet Stannous chloride, dihydrate

Teratogenicity:

Oral, rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Effects on Embryo or Fetus - fetal death.; Oral, rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Specific Developmental Abnormalities - craniofacial (including nose and tongue).

Reproductive:

Oral, rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Maternal Effects - other effects and Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants). Reproductive - Effects on Embryo or Fetus - fetal death

Mutagenicity:

DNA Damage: Human, Leukocyte = 10 umol/L.; DNA Damage: Hamster, Ovary = 50 umol/L.

Neurotoxicity:

No information found.

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Corrosive solid, acidic, inorganic, nos.
Hazard Class: 8
UN Number: UN3260
Packing Group: PGIII

Section 15 - Regulatory Information

US Federal

TSCA:

CAS# 10025-69-1 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

SARA Reportable Quantities (RQ):

CAS# 10025-69-1 does not have an RQ.

CERCLA/SARA Section 313:

Not reportable under Section 313.

OSHA - Highly Hazardous:

Not considered highly hazardous by OSHA.

US State

State Right to Know:



Material Safety Data Sheet

Stannous chloride, dihydrate

CAS# 10025-69-1 can be found on the following state right to know lists: Minnesota, (listed as Tin inorganic compounds).

California Regulations:

Not listed.

European/International Regulations

Canadian DSL/NDSL:

CAS# 10025-69-1 is not listed on the DSL or NDSL list.

Canada Ingredient Disclosure List:

CAS# 10025-69-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: September 28, 2006

Revision Date: April 15, 2008

Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc. assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application.

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OCT 11 2017

BY:

MATERIAL SAFETY DATA SHEET

Sulfuric Acid



Where reliability, consistency, and quality of product and service are our goals

1750 E. President Street; Savannah GA 31404
P 912-232-1101 F 912-232-1103

2600 Highway 421 North; Wilmington, NC 28401
P 910-762-5054 F 910-762-1600

4620 Highway 421 North; Wilmington, NC 28401
P 910-762-5054 F 910-762-1600

Page 1

I CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: SULFURIC ACID
CAS Number: 7664-93-9
Synonym: OIL OF VITRIOL
Manufacturer: Southern States Chemical, Inc.
Supplier: 100 E. President Street AND 2600 Highway 421 North AND 4620 Highway 421 North
Savannah GA 31404 Wilmington NC 28401 Wilmington NC 28401

24 Hour Emergency Assistance:
Chemtrec: 800-424-9300

General Assistance: [8 AM—5 PM (M-F EST)]
Savannah GA 912-232-1101
Wilmington NC 910-762-5054

2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER!

HEALTH HAZARD:

- ♦ CORROSIVE TO THE SKIN, EYES & RESPIRATORY TRACT.
- ♦ ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE
- ♦ CANCER HAZARD

(SEE "TOXICOLOGICAL INFORMATION" [SECTION #II] FOR MORE INFORMATION)

FLAMMABILITY HAZARDS: NON-COMBUSTIBLE

REACTIVITY HAZARDS: Exothermic Reaction- MAY REACT VIOLENTLY WITH WATER.
Always add acid to water, never water to acid!

POTENTIAL HEALTH EFFECTS

SKIN: CORROSIVE. Contact may cause reddening, itching, inflammation, burns, blistering and possibly severe tissue damage. Repeated or prolonged contact may result in drying, reddening, itching, pain, inflammation, cracking and possible secondary infection with tissue damage.

EYE: CORROSIVE. Exposure may cause severe burns, destruction of eye tissue and possible permanent injury or blindness. Prolonged or repeated exposure may cause irritation and conjunctivitis.

INHALATION: EXTREMELY IRRITATING AND CORROSIVE. May cause severe burns and tissue damage to the respiratory tract. Symptoms may include throat burns, constriction of the windpipe (bronchospasms), severe pulmonary edema and death, depending on the concentration and duration of exposure.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" [Section #II].

Other specific symptoms of exposure are listed under "Toxicological Information" [Section #II].

2 HAZARDS IDENTIFICATION, Cont.

POTENTIAL HEALTH EFFECTS

INGESTION: CORROSIVE. May cause painful irritation and burning of the mouth and throat, painful swallowing, labored breathing, burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection. Corrosive damage to the stomach and esophagus may be delayed.

Aspiration into lungs may cause chemical pneumonia and lung damage. Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological information" [Section #III].

Other specific symptoms of exposure are listed under "Toxicological information" [Section #III].

3 COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>Concentration</u>
SULFURIC ACID	7664-93-9	6-100%

4 FIRST AID MEASURES

SKIN:

Immediately flush skin with plenty of water, for at least 15 minutes, while removing contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION!

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

EYE:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eye-ball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION!

INHALATION:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION!

INGESTION:

If victim is conscious and alert, give 1-3 glasses of water to dilute stomach contents. Rinse mouth out with water. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs keep head below hips to prevent aspiration and monitor for breathing difficulty.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION!

5 FIRE FIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS:

Decomposes to form sulfur dioxide and sulfur trioxide.

EXTINGUISHING MEDIA:

Use carbon dioxide or dry chemical to extinguish fire.

BASIC FIRE FIGHTING PROCEDURES:

Do not add water to acid. Water applied directly results in evolution of heat and splattering of acid. Acid can react with metals to liberate flammable hydrogen gas, especially when diluted with water. Evacuate area and fight fire from a safe distance. Use water spray to cool adjacent structures and to protect personnel. Do not get water inside sulfuric acid containers. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Material will not burn.

Reacts with most metals to produce hydrogen gas which can form an explosive mixture with air.

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See "Exposure Control/Personal Protection" [Section #8]

ENVIRONMENTAL PRECAUTIONS:

If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released product. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE:

Keep unnecessary people away. Isolate area for at least 50-100 meters (160-330 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).

Large spills may be neutralized with dilute alkaline solutions of soda ash or lime. Stop leak when safe to do so.

See "Exposure Controls/Personal Protection" [Section #8].

7 HANDLING AND STORAGE

HANDLING:

This material should be stored and shipped in plastic or plastic lined containers. Do not use with materials or equipment sensitive to acidic solutions.

Do not eat, drink or smoke in areas of use or storage.

STORAGE:

Avoid contact with combustible materials, water, metals and alkalis. Store in a vented container. Sulfuric acid reacts with most metals to produce hydrogen gas which can form an explosive mixture with air. Empty containers may contain product residue. Do not reuse without adequate precautions.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear chemical safety goggles and face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling. Additional protection may be necessary to prevent skin contact including use of apron, gauntlets, boots, impervious protective suit and face shield or splash goggles. Provide safety showers at any location where skin contact can occur.

Use good personal hygiene.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH/MSHA approved air purifying respirator with an appropriate acid gas cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

EXPOSURE LIMITS / HEALTH HAZARDS:

1 mg/m³ 8-Hour TWA (OSHA)

1 mg/m³ 8-Hour TWA (ACGIH)

3 mg/m³ 15-Min STEL (ACGIH)

*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

9 PHYSICAL AND CHEMICAL PROPERTIES

ODOR AND APPEARANCE:

COLORLESS TO CLOUDY OILY LOOKING LIQUID, ALMOST ODORLESS

Boiling Point	6-85% - 215°-440°F [102°-227°C], 93% - 541°F [283°C], 96% - 600°F [316°C], 99%- 625°F [329°C]
Specific Gravity	6-85% - 1.04-1.79, 93% - 1.84, 96% - 1.84, 99% - 1.84
Vapor Pressure	(6-85% - 48-<1,93%-<1,96%-<1,99%-<1) (mmHg at 100°F)
Solubility in Water	100%
pH Value	< 1
Freezing Point	6-85% = 30°-(-40°F [-1°-(-30°C)], 85% = 46°F [8°C], 93% = -20°F [-29°C], 96% = 5.5°F [-15°C], 99% = 40°F [4°C]
Molecular Formula	H ₂ SO ₄
Molecular Weight	98.08
Chemical Family	MINERAL ACID

10 STABILITY AND REACTIVITY

STABILITY / INCOMPATIBILITY:

Avoid contact with water.

Incompatible with combustible materials, water, metals and alkalis. See precautions under "Handling & Storage" [Section #7]

HAZARDOUS REACTIONS / DECOMPOSITION PRODUCTS

Decomposes to form sulfur dioxide and sulfur trioxide.

11 TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE:

Inhalation, ingestion, skin and eye contact.

LD50

LD50: Sulfuric Acid, Rat, Oral, 2140mg/kg.

TOXICOLOGICAL INFORMATION:

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: kidney, liver, teeth, respiratory and cardiovascular systems.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: attacks enamel of teeth, vomiting, clammy skin, weak and rapid pulse.

Other symptoms of exposure may include the following: shallow respiration, chronic bronchitis, lung function changes and scanty urine.

CARCINOGENICITY:

IARC has determined that there is sufficient evidence for the carcinogenicity of occupational exposure to strong inorganic acid mists containing sulfuric acid in humans (IARC Class 1).

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin and respiratory system.

12 ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL MOBILITY (SOIL & AIR):

When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.

ECOTOXICITY:

Aquatic toxicity range—Slightly to moderately toxic

Bluegill sunfish, 48 Hour; LC50, 49mg/L (Tap water, 20°C)

Flounder, 48 Hour; LC50, 100-330mg/L (Aerated water, conditions of bioassay not specified)

Shrimp, 48 Hour; LC50, 80-90mg/L (Aerated water, conditions of bioassay not specified)

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

This product as supplied, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261) due to its corrosiveness and reactivity. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268, 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

BILL OF LADING - BULK (U. S. DOT):

- RQ, Sulfuric Acid, 8, UN 1830, PG II (use with more than 51% acid)
RQ, Sulfuric Acid, 8, UN 2796, PG II (use with not more than 51% acid)

BILL OF LADING - NON-BULK (U. S. DOT)

- RQ, Sulfuric Acid, 8, UN 1830, PG II (use with more than 51% acid)
RQ, Sulfuric Acid, 8, UN 2796, PG II (use with more than 51% acid)

U. S. DEPARTMENT OF TRANSPORTATION (DOT) REQUIREMENTS:

General Transportation Information for Bulk Shipments

Proper Shipping Name	Sulfuric Acid
Hazard Class	8
UN/NA Code	UN 1830, UN 2796
Packaging Group	PG II
Labels Required	Corrosive
Placards Required	Corrosive, UN 1830 (>51%), UN 2796 (\leq 51%)
Reportable Quantity	See Regulatory Information [Section #15]

General Transportation Information for Non-Bulk Shipments

Proper Shipping Name	Sulfuric Acid
Hazard Class	8
UN/NA Code	UN 1830, UN 2796
Packaging Group	PG II
Labels Required	Corrosive
Reportable Quantity	See Regulatory Information [Section #15]

(The above description may not cover shipping in all cases. Please consult 49 CFR 172.101 for specific shipping information)

15

REGULATORY INFORMATION

FEDERAL REGULATIONS:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory. This product, as supplied, contains sulfuric acid, a Hazardous Substance as per 40 CFR Part 302.4 and an Extremely Hazardous Substance as per 40 CFR Part 344. The reportable quantity for sulfuric acid is 1,000 pounds. Any release of this product equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR Part 302.6 and 40 CFR 355.40, respectively. Failure to report may result in substantial civil and criminal penalties. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. This product contains one or more components designated as hazardous substances or toxic pollutants under Section 112 of the Clean Air Act.

There may be specific regulations at the local, regional or state/provincial level that pertain to this product.

HCS CLASSIFICATION:

Oxidizing material, Highly toxic material, Corrosive material, Carcinogen, Target organ effects.

STATE REGULATIONS:

Based on available information this product contains components or chemicals currently known to the state of California to cause cancer. Reformulation, use or processing of this product may affect its composition and require re-evaluation.

SARA TITLE III RATINGS

Immediate Hazard: X Delayed Hazard: X Fire Hazard: Pressure Hazard: Reactivity Hazard: X

NFPA RATINGS

Health 3	Flammability 0	Reactivity 2	Special Hazards	W
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HMIS RATINGS

Health 3	Flammability 0	Reactivity 2
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Following ingredients of this product are listed in **SARA 313**

SARA Listed Ingredient Name SULFURIC ACID	CAS Number 7664-93-9	Maximum% 100.0
--	-------------------------	-------------------

16

OTHER INFORMATION

DISCLAIMER:

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.



A Dulon Industries Company

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Wilmington, NC 28401

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Wilmington, NC 28401

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Fax: 912-232-1103

Last Updated 06/20/11

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639C Tire & Footprint Casting Plaster

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

RECEIVED
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BY:

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : 639C Tire & Footprint Casting Plaster
Product code : 639C; 639C1

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

Use of the substance/mixture : Casting material

1.3. Details of the supplier of the safety data sheet

SIRCHIE
100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4. Emergency telephone number

Emergency number : 1.800.424.9300
CHEMTREC: 1.800.424.9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
chalk	(CAS No) 1317-65-3	50 - 80	Not classified
calcium sulfate	(CAS No) 7778-18-9	50 - 80	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

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4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

chalk (1317-65-3)

Not applicable

calcium sulfate (7778-18-9)

ACGIH	ACGIH TWA (mg/m³)	10 mg/m³ (Calcium sulfate; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)
Not applicable		

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8.2 Exposure controls

Personal protective equipment

: Dust formation: dust mask. Gloves. Safety glasses.



Hand protection

: Wear protective gloves.

Eye protection

: Chemical goggles or safety glasses.

Respiratory protection

: Wear appropriate mask.

Other information

: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powders.
Color	: white
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Miscible with water. Water: Solubility in water of component(s) of the mixture : • chalk: < 0.1 g/100ml • calcium sulfate: 0.25 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2 Other information

No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2 Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3 Possibility of hazardous reactions

No reactivity hazard other than the effects described in sub-sections below.

10.4 Conditions to avoid

None under recommended storage and handling conditions (see section 7). Refer to Section 10 on Incompatible Materials.

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10.5 Incompatible materials

Strong acids. Strong bases.

10.6 Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Not classified

chalk (1317-65-3)

LD50 oral rat	6450 mg/kg (Rat; Literature study)
ATE US (oral)	6450.000 mg/kg body weight

calcium sulfate (7778-18-9)

LD50 oral rat	> 1584 mg/kg body weight (Rat; OECD 420: Acute Oral toxicity – Acute Toxic Class Method; Experimental value)
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Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1.1 Toxicity

calcium sulfate (7778-18-9)	
LC50 fish 1	2980 mg/l (LC50; 96 h)

12.2.1 Persistence and degradability

639C Tire & Footprint Casting Plaster	
Persistence and degradability	Not established.

chalk (1317-65-3)

Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

calcium sulfate (7778-18-9)

Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

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12.3. Bioaccumulative potential

639C Tire & Footprint Casting Plaster	
Bioaccumulative potential	Not established.
chalk (1317-65-3)	
Bioaccumulative potential	No bioaccumulation data available.
calcium sulfate (7778-18-9)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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Training advice

: Normal use of this product shall imply use in accordance with the instructions on the packaging. Keep in tightly closed container. Keep cool and dry. Avoid all ignition sources - heat, open flame, sparks. Avoid incompatible materials. Avoid dust creation and accumulation. Avoid inhalation and ingestion. Avoid contact with eyes. Wash thoroughly after handling.

Other information

: This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

NFPA health hazard

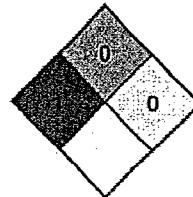
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 0 Minimal Hazard - Materials that will not burn

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection

: E

E - Safety glasses, Gloves, Dust respirator

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.