Flamemaster Corp.
13576 Desmond Street
Pacoima, CA 91331 - USA

SAFETY DATA SHEET
APRIL 2015

File: CS3201AB GSA 07-10
Optical Sealant Base

Section -1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier: CS-3201 Part-A Class-B Base (all application times) Black
- Product Name: Sealing Compound Part-A
- Product reference: CS-3201-B (BLACK)

1.2. Product Use:
- Aircraft Sealant

1.3. Manufacturer's Name: **CAGE Code: 14439** **Flamemaster Corp.** **Chem Seal Division** **13576 Desmond Street** **Pacoima, CA 91333 – USA**	**1.3.1 Suppliers Name (if not manufacturer)**
Technical Contact: **Flamemaster Corp.** **Tel: 818-890-1401** **Fax: 818-890-6001** www.flamemaster.com	**1.4. Emergency Telephone:** Chemtrec – Chemtrec International 800-424-9300 (North America) 703-527-3887 (Outside North America))

Specification: AMS 7124 / MIL-S-7502 Base PART A CLASS B

NSN:		8030-00-262-9045 CS3201 B4 PINT KIT	8030-00-031-7781 CS3201 B1/2 PINT KIT	8030-00-322-6928 CS3201 B4 GAL KIT	
		8030-00-851-8379 CS3201 B-2 2.5 OZ	8030-00-613-9083 CS3201 B-2 PINT KIT	8030-01-839-2099 CS3201 B4 QT KIT	

This sds is provided without any warranty expressed or implied regarding its correctness or suitability for specific situations.
The conditions of handling,storage, use and disposal are beyond our control and may be beyond our knowledge.

Section -2. HAZARD (S) IDENTIFICATION

OSHA/HCS STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CLASSIFICATION OF THE MIXTURE:

SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (UNBORN CHILD) - Category 2
TOXIC TO AQUATIC LIFE - Category 4
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 11.6%

GHS LABEL REQUIREMENTS
HAZARD PICTOGRAMS

SIGNAL WORD : WARNING

HAZARD STATEMENTS:

CAUSES SERIOUS EYE IRRITATION - (H319)
CAUSES SKIN IRRITATION - (H315)
SUSPECTED OF DAMAGING THE UNBORN CHILD - (H361d)
SUSPECTED OF CAUSING CANCER - (H351)
MAY CAUSE LONG LASTING HARMFUL EFFECTS TO AQUATIC LIFE - (H413)

PRECAUTIONARY STATEMENTS:

- P101+P102+P103: If medical advice is needed, have product container or label at hand. Keep out of reach of children.
- Read label before use
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames and hot surfaces-No Smoking
- P240:Ground/bond container and receiving equipment
- P261+P262+P263+P264:Avoid breathing dust/fumes/gas/mist/vapours/spray.Do not get in eyes , on skin, or on clothing. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling.
- P270+P271+P273: Do not eat drink or smoke when using this product. Use only outdoors or in a well ventilated area. Avoid release to the environment.
- P281+P280: Use personal protective equipment as required. Wear protective gloves/ protective clothing/ eye protection/face protection
- P301+P310+P331: If swallowed: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.
- P305+P351+P338+P315: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses,if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- P304+P340+P314: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell
- P342+P340+P315: If experiencing respiratory symptoms: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention.
- P302+P352: If on skin (or in hair) : Wash with plenty of soap and water. If skin irritation occurs seek medical attention
- P306+P361: If on clothing: Remove/ take off immediately all contaminated clothing
- P402+P403+P404: Store in a dry place. Store in a well ventilated space. Store in a closed container.
- P233+P234+P235: Keep container tightly closed. Keep only in original container. Keep cool.

SUPPLEMENTAL LABEL ELEMENTS:

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of concentrations above recommended limits causes headaches, drowsiness and nausea and could lead to unconsciousness or possibly death.
1-component mixtures: formaldehyde is released during the curing phase. Formaldehyde may cause irreversible effects, is irritating to the mucous membranes and may cause the skin to become sensitized.
Avoid any contact with skin or clothing and wash thoroughly after handling.
Emits toxic fumes when heated.

HAZARDS NOT OTHERWISE CLASSIFIED:
Prolonged or repeated exposure may dry skin and / or cause skin irritation.

Section -3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical family : Mixture of organic compounds
For the hazards of the composition, (SDS see Section 2).

GHS CLASSIFICATION:LIQUID POLYMER // OSHA HAZARDS: TARGET ORGAN EFFECT,IRRITANT,FLAMMABLE LIQUID
EYE IRRITATION (CATEGORY 2)
SKIN IRRITATION (CATEGORY 2)
SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE-(CATEGORY 3)
AQUATIC, CHRONIC (CATEGORY 3)

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS): TOLUENE
FLAMMABLE LIQUIDS (CATEGORY 2),H225
SKIN IRRITATION (CATEGORY 2),H315
REPRODUCTIVE TOXICITY (CATEGORY 2),H361
SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE-(CATEGORY 3),CENTRAL NERVOUS SYSTEM,H336
SPECIFIC TARGET ORGAN TOXICITY-REPEATED EXPOSURE (CATEGORY 2),H373
ASPIRATION HAZARD (CATEGORY 1),H304
ACUTE AQUATIC TOXICITY (CATEGORY 2),H401

CALCIUM CARBONATE:
GHS CLASSIFICATION: CALCIUM CARBONATE
EYE DAMAGE (CATEGORY 1)
SKIN IRRITATION (CATEGORY 2)
SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE-(CATEGORY 3)

Bisphenol A- Epoxy Resin with Toluene
FLAMMABLE LIQUIDS - CATEGORY 2
SKIN CORROSION/IRRITATION - CATEGORY 2
SERIOUS EYE DAMAGE/EYE IRRITATION - CATEGORY 2A
SKIN SENSITIZATION - CATEGORY 1
TOXIC TO REPRODUCTION (UNBORN CHILD) - CATEGORY 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (NARCOTIC EFFECTS) - CATEGORY 3
AQUATIC HAZARD (ACUTE) - CATEGORY 2
AQUATIC HAZARD (LONG TERM) - CATEGORY 3

SUBSTANCE % by weight in the product	H&P STATEMENTS	CAS	EINECS/ELINCS
LIQUID POLYMER < 70%	H319,H335,H315,H412,H223, P210,P270,P305+P351+P338	N/A	POLYMER
	+P313,P306+P361,P370+P260		
TOLUENE (Methylbenzene) < 2%	H225,H304,H315,H319,H332,H336, H361,H371,H401, P210P260,P281,P301+P310,P305+ P351+ P338,P331	108-88-3	203-625-9
Calcium Carbonate <45%	H319 P305+P351+P313,P280	72608-12-9	207-439-9
Bisphenol A- Epoxy Resin with Toluene <3%	H225, H319, H315, H317, H361d, H336, H400, H412	N/A	N/A

Section -4. FIRST-AID MEASURES

General: When in doubt or symptoms persist, seek medical attention. Have Safety Data Sheet information available. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air, if breathing has stopped, administer artificial respiration. Give nothing by mouth, seek immediate medical attention.

Eye contact: Remove any contact lenses if present and easy to do. Irrigate with clean, fresh water for at least 15 minutes, holding the eye lids apart, and seek immediate medical attention.

Skin contact: Remove contaminated clothing. Wash skin thoroughly with soap and water or use recognized skin cleaners. Do NOT use aromatic solvents, thinners or petroleum products.

Ingestion: If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Section -5. FIRE-FIGHTING MEASURES

Extinguishing agents

Recommended: Universal resistant foam, CO2, water, powder.

Agents to avoid: None known

Attention

Promptly remove all persons in the event of a fire from the fire area. If safe to do so, remove all containers from fire area as well.

Fire will produce dense black smoke. Exposure to decomposition products may cause a Health Hazard. Fire fighters should wear self-contained breathing apparatus.

Water mist may be used to cool closed containers to prevent pressure build-up and possible auto-ignition and explosion when exposed to extreme heat.

Do not weld, flame cut or expose to extreme heat or ignition sources, empty containers which have contained flammable products.

Do not allow run-off from fire fighting to enter drains or water courses.

HAZARDOUS DECOMPOSITION PRODUCTS INCLUDE: CARBON DIOXIDE, CARBON MONOXIDE, HALOGENATED COMPOUNDS, METAL OXIDE / OXIDES AND FORMALDEHYDE

Section -6. ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition, ventilate the area. Avoid breathing vapors by using appropriate respiratory protective equipment. Refer to protective measures listed in sections 7 & 8.
Collect spill with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with local regulations (see section 13). Do not allow to enter drains or watercourses.
Clean-up with a detergent/ water mix ; avoid use of aromatic solvents. If the product enters drains or watercourses, inform authority with jurisdiction in accordance with state / local regulations.

Section -7. HANDLING AND STORAGE

7.1 Handling:

No smoking, eating and drinking during handling. Wash hands and face before eating, drinking, or smoking.
Avoid exposure during pregnancy
Keep containers tightly closed. Prior to movement containers which are opened should be carefully resealed.
Avoid skin and eye contact. Avoid inhalation in case of exposure to vapor and spray mist.
Handle and open containers with care to avoid spilling of contents. Never use pressure to empty; container is not a pressure vessel. Clean or discard contaminated clothing and shoes.
Preparation may charge electrostatically; always use grounding/ bonding/ earthing leads when transferring contents of containers. Operators should wear antistatic footwear and clothing, and floors should be electrically conductive.
Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapor in air, and avoid vapor concentration higher than the Occupational Exposure Limits.
Use in areas from which local sources of ignition have been excluded. Electrical equipment including lighting should be protected to the appropriate standard. Isolate from sources of heat, sparks and open flame. Non-sparking tools are recommended.

7.2 Storage:

Observe label precautions. Store between 32/F and 95/F (0/C and 35/C) in a dry, clean and well ventilated place, away from sources of heat, ignition, and direct sunlight. For flash points below 23 °C store in an area constructed to the appropriate standard

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Engineering measures:

Avoid the inhalation of vapors, spray mist and particulates. Achieve by local exhaust ventilation providing good general extraction as to keep air-borne concentration below the Occupational Exposure Limits (OEL).
If local / area ventilation is not sufficient to comply with OEL, suitable (NIOSH) respiratory protection to be provided. Always provide suitable (NIOSH) respiratory protection when sanding, grinding or otherwise abrading cured material.

8.2 Exposure limits

Work place exposure limits (8 hour)

Substance	OSHA	ACGIH TWA
LIQUID POLYMER	Not known	Not known
TOLUENE (Methylbenzene)*	200 ppm	20 ppm
CALCIUM CARBONATE *	5 mg/m³ (RESPIRABLE FRACTION)	3 mg/m³ (RESPIRABLE FRACTION)
CALCIUM CARBONATE *	15mg/m³ (TOTAL DUST)	10 mg/m³ (TOTAL DUST)
* can be absorbed through skin		

8.3 Personal protection

All Personal Protective Equipment, including Respiratory Protection, used to control exposure to hazardous substances must be selected to meet the requirements of OSHA Regulations.

Respiratory protection :

Appropriate respiratory protection equipment should be selected according to the type of contaminants, following regulatory (OSHA / NIOSH) and manufacturers instructions including proper fitting of devices.

Hand protection :

For prolonged or repeated contact, recommend gloves type: polyvinyl alcohol, nitrile rubber, latex rubber (some people may exhibit sensitivity to Latex). Barrier creams may help to protect exposed areas of the skin. However, they should not be applied post exposure.

Eye protection :

Use safety glasses with side shields to protect against splashes. Face shields may also be worn.

Skin protection :

Protective clothing made of antistatic and fire resistant fibers. All parts of the body should be washed after contact. Use good hygiene and industrial practices, keep working clothes clean.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at: 68 º F (20 º C) Liquid
- Flash point: 200 ° F (93 ° C) Method: TCC
- Specific gravity at: 68 ° F (20 ° C) N/A
- Vapor Density: NIL
- Lower Explosive Limit (% vol.): N/A
- Upper Explosive Limit '(% vol.): N/A
- Miscibility in water at 20 º C: NEGLIGIBLE
- VOC: N/A
- Ph : N/A
- Volatile by VOLUME: N/A
- Vapor pressure at: 68 º F (20 º C) NIL
- Color: Black
- Appearance: PASTE
- Odor: Polysulfide Odor
- Boiling Point: Unknown
- Material Supports Combustion: Yes

10. STABILITY AND REACTIVITY

Stable under recommended storage and handling conditions (see SDS section 7). In case of combustion, may produce hazardous decomposition products such as :

- Carbon Monoxide
- Sulfur Oxides
- Carbon Dioxide
- Formaldehyde
- Halogenated Compounds
- Oxides of Carbon,Nitrogen,Sulfur Dioxide,Trace Hydrogen Sulfide
- Metal Oxide / Oxides
- Smoke

11. TOXICOLOGICAL INFORMATION

There are no data available on the preparation itself. See (SDS Sections 3 and 15) for details.
Exposure to component solvents vapors at concentrations in excess of the stated Occupational Exposure Limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.
Symptoms and signs of overexposure include headache, dizziness, fatigue, muscular weakness, drowsiness, reduced fetal weight, increase in fetal deaths, skeletal malformations, and in extreme cases loss of consciousness
Repeated or prolonged contact with the preparation may cause Defatting of the skin resulting in non-allergic dermatitis and absorption through the skin.
The liquid splashed in the eyes causes serious eye irritation and damage.
Irritating to mouth, throat and stomach. Ingestion causes reduced fetal weight, increased fetal deaths and skeletal malformations
Formaldehyde is released during curing.

ACUTE TOXICITY:

PRODUCT:	RESULT	SPECIES	DOSE	EXPOSURE
Calcium Carbonate	LD50 ORAL	Rat	6450 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m³	4 Hours
	LC50 Inhalation Vapor	Rat	8000 ppm	4 Hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LD50 ORAL	Rat	636 mg/kg	-
Bisphenol A- Epoxy Resin	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 ORAL	Rat	>2000 mg/kg	-

May cause damage to organs through prolonged or repeated exposure.
Suspected of causing cancer. Risk depends on level and duration of exposure.
Suspected of damaging the unborn child.

CARCINOGENICITY:

INGREDIENT	IARC	OSHA	NTP	CAS#
TOLUENE :	3	-	-	108-88-3

SPECIFIC TARGET ORGAN TOXICITY-STOT (SINGLE EXPOSURE)
LIQUID POLYMER - CATEGORY 3
TOLUENE - CATEGORY 3

SPECIFIC TARGET ORGAN TOXICITY-STOT (REPEATED EXPOSURE)
TOLUENE - CATEGORY 2

TARGET ORGANS: BRAIN, BLOOD, KIDNEYS, LUNGS, REPRODUCTIVE SYSTEM, LIVER, HEART, PERIPHERAL NERVOUS SYSTEM, GASTROINTESTINAL TRACT, UPPER RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS AND/OR CORNEA.

ASPIRATION HAZARD:
TOLUENE - CATEGORY 1

12. ECOLOGICAL INFORMATION

There is no data available on the preparation itself. Do not allow the product to enter drains or water ways. See (SDS Sections 3 and 15)

Toxicity :

Persistance and Degradability :

Product / Ingredient	Aquatic Half Life	Photolysis	Biodegradability
Toluene	-	-	Readily (5 days - 81 %)
bisphenol A - epoxy resins	-	-	Not Readily Biodegradeable (28 days - 5%)

Bioaccumulative Potential :

Product / Ingredient	LogP(ow)	BCF	Potential
Toluene	2.73	8.32	low
bisphenol A - epoxy resins	-	31	low

Mobility in Soil : Not Available

13. DISPOSAL CONSIDERATIONS

Recommended incineration or land fill as hazardous waste per Federal, State and local regulations.

React with curing agent and dispose of as hazardous waste per Federal, State and local regulations. Recommended incineration or land fill.

14. TRANSPORT INFORMATION

DOT: Not regulated
UN Number: Not regulated
IATA: Not regulated
IMDG/IMO: Not regulated
NMFC: 4620 SUB.5 – CL.60
Schedule B # 3506.91.0000

15. REGULATORY INFORMATION

US Regulations Federal

chemical (s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 (SARA)	**Chemical Name**	**CAS No**	**Weight %**	**Threshold limit** (Reporting Value)
	TOLUENE (Methylbenzene)	108-88-3	<2%	Unknown
	LIQUID POLYMER	N/A	<70%	Unknown
	Calcium Carbonate	72608-12-9	<45%	Unknown

SARA notifications must remain attached to this SDS. Any copies and /or distribution of this SDS must include all SARA notifications.

All remaining Constituents are non-hazardous per FED-STD-313 All Constituents are listed in TSCA inventory; complete mixture is excluded Per TSCA Par. 710.4 (d) 95 (6) (7) Constituents are not listed in TSCA 12b CORR. LIST

US Regulations State

California Proposition 65 (Developmental – Female)	**TOLUENE**	108-88-3	<2%	>= 1.0%
Massachusetts	**TOLUENE**	108-88-3	<2%	>= 1.0%
New Jersey	**TOLUENE**	108-88-3	<2%	>= 1.0%
Pennsylvania	**TOLUENE**	108-88-3	<2%	>= 1.0%
Rhode Island	**TOLUENE**	108-88-3	<2%	>= 1.0%
California Proposition 65 (Developmental – Female)	LIQUID POLYMER	N/A	<70%	>= 1.0%
Massachusetts	LIQUID POLYMER	N/A	<70%	>= 1.0%
New Jersey	LIQUID POLYMER	N/A	<70%	>= 1.0%
Pennsylvania	LIQUID POLYMER	N/A	<70%	>= 1.0%
Rhode Island	LIQUID POLYMER	N/A	<70%	>= 1.0%
California Proposition 65 (Developmental – Female)	Calcium Carbonate	72608-12-9	<45%	>= 1.0%
Massachusetts	Calcium Carbonate	72608-12-9	<45%	>= 1.0%
New Jersey	Calcium Carbonate	72608-12-9	<45%	>= 1.0%
Pennsylvania	Calcium Carbonate	72608-12-9	<45%	>= 1.0%
Rhode Island	Calcium Carbonate	72608-12-9	<45%	>= 1.0%

United States Inventory(TSCA 8B) : Not Determined

Australia Inventory (AICS) : Not Determined

Canada Inventory (DSL) : Not Determined

China Inventory (IECSC) : Not Determined

Japan Inventory (ENCS) : Not Determined

Korea Inventory (KECI) : Not Determined

New Zealand (NZloC) : Not Determined

Philippines Inventory (PICCS) : Not Determined

Europe Inventory (REACH) : Please contact your supplier concerning the status of this material

United States: Sara 302/304 (Sara 304 RQ): Not Applicable

Information On Ingredients: None Were Found

Sara 311/312

Classification: Immediate (acute) Health Hazard, Delayed (chronic) Health Hazard

Information On Ingredients:

Liquid Polymer: Immediate (acute) Health Hazard

Toluene: Fire Hazard, Immediate (acute) Health Hazard, Delayed (chronic) Health Hazard

Bisphenol A- Epoxy Resin with Toluene : Fire Hazard, Immediate (acute) Health Hazard, Delayed (chronic) Health Hazard

Sudden Release Of Pressure: No Products

Reactivity: No Products

California Prop. 65 : Warning

This product contains a chemical or chemicals known by the State of California to cause cancer, birth defects, or other reproductive harm.

Canada

Class B – Flammable
TOLUENE

Class D - Poisonous and Infectious materials Division 2: Materials Causing Other Toxic Effects D2A TOLUENE D2B TOLUENE CAS# 108-88-3
Liquid Polymer CAS# N/A
Calcium Carbonate CAS# 72608-12-9

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

Listed National Pollutant Release Inventory (NPRI):TOLUENE CAS:108-88-3
Calcium Carbonate CAS#72608-12-9 Liquid Polymer cas# N/A

16. OTHER INFORMATION

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PPE	H

NFPA

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PPE	H

HMIS

* Customer and / or end user is responsible for determining Personal Protection Equipment

Preparer:	Flamemaster / Compliance Rev-A 4/02/2015 Supersedes (conversion)	Revision Notes: A	Conversion to ANSI format
Containers:	plastic jars, metal cans cartridge kits		

Limited Quantity See SDS Section 14

Maximum container size 50 Gallons / 190 Liters

End of Safety Data Sheet

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Section -1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifier: CS-3201 PT B CLASS B CATALYST BLACK OR TAN ALL
- Product -Sealing Compound
- Product reference: CS-3201-B

1.2. Product Use:
- SEALING COMPOUND

1.3. Manufacturer's Name:
CAGE Code: 14439
Flamemaster Corp.
Chem Seal Division
13576 Desmond Street
Pacoima, CA 91333 – USA

1.3.1 Suppliers Name (if not manufacturer)

Technical Contact:
Flamemaster Corp.
Tel: 818-890-1401
Fax: 818-890-6001
www.flamemaster.com

1.4. Emergency Telephone:
Chemtrec – Chemtrec International
800-424-9300 (North America)
703-527-3887 (Outside North America))

Specification: AMS 7124 / MIL-S-7502 CATALYST PART B CLASS B

NSN:	8030-00-262-9041 CS3201B2 1/2 PINT KIT	8030-00-024-9634 CS3201 B2 PINT KIT	8030-00-275-8117 CS3201 B2 QT KIT	8030-00-322-6928 CS3201 B4 GAL KIT	
	8030-00-031-7781 CS3201 B1/2 PINT KIT	8030-00-851-8379 CS3201 B-2 2.5 OZ	8030-00-613-9083 CS3201 B-2 PINT KIT	8030-01-839-2099 CS3201 B4 QT KIT	
	8030-00-262-9045 CS3201 B4 PINT KIT				

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Section -2. HAZARD (S) IDENTIFICATION

OXIDIZING SOLIDS 3, H272
ACUTE TOXICITY (ORAL) 4, H302
ACUTE TOXICITY (INHALATION) 4, H332
SKIN SENSITIZATION 1, H317
CARCINOGENICITY 1B, H350
CARCINOGENICITY (ORAL) 2, H351
TOXIC TO REPRODUCTION (FERTILITY) 2, H361f
REPRODUCTIVE TOXICITY 1A, H360
SPECIFIC TARGET ORGAN TOXICITY (STOT) REPEATED EXPOSURE 2, H373
ACUTE AQUATIC TOXICITY 1, H400
CHRONIC AQUATIC TOXICITY 1, H410

For A Complete List of H-Statements and Classifications See Section 16

OSHA / HCS STATUS : THIS MATERIAL IS CONSIDERED HAZARDOUS BY THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)
Human and Environmental Hazards:

HAZARD STATEMENTS:

May intensify fire; Oxidiser
Harmful by Inhalation and / or Swallowing
Irritating to Eyes and Skin
May Cause An Allergic Skin Reaction
May Cause Cancer
May Damage Fertility or the Unborn Child
May Cause Damage to Organs Through Prolonged or Repeated Exposure
Very Toxic to Aquatic Life with Long Lasting Effects

HAZARD PICTOGRAMS:

SIGNAL WORD: **DANGER**

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Full text of P statements associated to this compound:

- P101+P102+P103: If medical advice is needed, have product container or label at hand. Keep out of reach of children.
- Read label before use
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames and hot surfaces-No Smoking
- P240:Ground/bond container and receiving equipment
- P261+P262+P263+P264:Avoid breathing dust/fumes/gas/mist/vapours/spray.Do not get in eyes , on skin, or on clothing. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling.
- P270+P271+P273: Do not eat drink or smoke when using this product. Use only outdoors or in a well ventilated area. Avoid release to the environment.
- P281+P280: Use personal protective equipment as required. Wear protective gloves/ protective clothing/ eye protection/face protection
- P301+P310+P331: If swallowed: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.
- P305+P351+P338+P315: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses,if present and easy to do. Continue rinsing. Get immediate medical advice attention.
- P304+P340+P314: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell
- P342+P340+P315: If experiencing respiratory symptoms: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention.
- P302+P352: If on skin: Wash with plenty of soap and water
- P306+P361: If on clothing: Remove/ take off immediately all contaminated clothing
- P402+P403+P404: Store in a dry place. Store in a well ventilated space. Store in a closed container.
- P233+P234+P235: Keep container tightly closed. Keep only in original container. Keep cool.

HAZARDS NOT OTHERWISE CLASSIFIED: OXIDISING POTENTIAL: Contact with combustible material may result in fire. Keep away from combustible materials. This material increases the risk of fire and may aid in combustion.

Other Hazards that do not result in classification:
Prolonged or repeated exposure may dry skin and / or cause irritation

Section -3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical family : Mixture of organic compounds
For the hazards of the composition, (SDS see Section 2).

LEAD DIOXIDE	CAS#1309-60-0	EC#215-174-5	70-80% by weight

OSHA HAZARDS: OXIDIZER, CARCINOGEN, TARGET ORGAN EFFECT, TOXIC BY INHALATION, HARMFUL BY INGESTION
TERATOGEN,REPRODUCTIVE HAZARD
TARGET ORGANS: FEMALE REPRODUCTIVE SYSTEM, MALE REPRODUCTIVE SYSTEM, NERVES, BLOOD, KIDNEY
GHS CLASSIFICATION: LEAD DIOXIDE
OXIDIZING SOLIDS (CATEGORY 3), H272
ACUTE TOXICITY, ORAL (CATEGORY 4), H302
ACUTE TOXICITY, INHALATION (CATEGORY 4),H332
CARCINOGENICITY (CATEGORY 1B), H350
REPRODUCTIVE TOXICITY (CATEGORY 1A), H360
SPECIFIC TARGET ORGAN TOXICITY-REPEATED EXPOSURE (CATEGORY 2), H3
ACUTE AQUATIC TOXICITY (CATEGORY 1), H400
CHRONIC AQUATIC TOXICITY (CATEGORY 1), H410

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LEAD OXIDE **CAS#1317-36-8** **EC# 215-267-0** **<10% by weight**

OSHA HAZARDS: CARCINOGEN, TARGET ORGAN EFFECT, TOXIC BY INHALATION,HARMFUL BY INGESTION
TERATOGEN, REPRODUCTIVE HAZARD
TARGET ORGANS: BLOOD, KIDNEY, NERVES, GASTROINTESTINAL TRACT, REPRODUCTIVE SYSTEM
GHS CLASSIFICATION: LEAD OXIDE
ACUTE TOXICITY, INHALATION (CATEGORY 4), H332
ACUTE TOXICITY, ORAL (CATEGORY 4), H302
CARCINOGENICITY, (ORAL), (CATEGORY 2), H351
REPRODUCTIVE TOXICITY (CATEGORY 1A), H360
SPECIFIC TARGET ORGAN TOXICITY-REPEATED EXPOSURE (CATEGORY 2), H373
ACUTE AQUATIC TOXICITY (CATEGORY 1), H400
CHRONIC AQUATIC TOXICITY (CATEGORY 1),H410

Lead Oxide is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

CHEMICAL NAME: TERPHENYL, HYDROGENATED CAS# 61788-32-7 EC# 262-967-7 <50% by weight
AQUATIC CHRONIC (CATEGORY 4) - H413

CHEMICAL NAME: TERPHENYL CAS# 26140-60-3 EC# 247-477-3 <10% by weight
AQUATIC ACUTE (CATEGORY 1) - H400
AQUATIC CHRONIC (CATEGORY 1) - H410

CHEMICAL NAME: POLYPHENYL, QUATER AND HIGHER CAS# 68956-74-1 <10% by weight

Section -4. FIRST-AID MEASURES

General: When in doubt or symptoms persist, seek medical attention. Have Safety Data Sheet information available. Never give anything by mouth to an unconscious person.
Inhalation: Remove to fresh air, if breathing has stopped, administer artificial respiration. Give nothing by mouth, seek immediate medical attention.
Eye contact: Check for and remove any contact lenses. Irrigate with clean, fresh water for at least 15 minutes, holding the eyelids apart. Seek immediate medical attention.
Skin contact: Remove contaminated clothing. Wash skin thoroughly with soap and water or use recognized skin cleaners. Do NOT use aromatic solvents, thinners or petroleum products.
Ingestion: If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

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Section -5. FIRE-FIGHTING MEASURES

Extinguishing agents

Recommended: Universal resistant foam, CO2, water, powder.
Agents to avoid: None known

Attention

Fire will produce dense black smoke. Exposure to decomposition products may cause a Health Hazard. Fire fighters should wear self-contained breathing apparatus.
Water mist may be used to cool closed containers to prevent pressure build-up and possible auto-ignition and explosion when exposed to extreme heat.
Do not weld, flame cut or expose to extreme heat or ignition sources, empty containers which have contained flammable products.
Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products include: Carbon Dioxide, Carbon Monoxide, Nitrogen Oxides, Sulfur Oxides
Metal Oxide / Oxides, Lead Oxides

Section -6. ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition, ventilate the area. Avoid breathing vapors by using appropriate respiratory protective equipment. Refer to protective measures listed in sections 7 & 8.
Collect spill with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with local regulations (see section 13). Do not allow to enter drains or watercourses.
Clean-up with a detergent/ water mix ; avoid use of aromatic solvents. If the product enters drains or watercourses, inform authority with jurisdiction in accordance with state / local regulations.

Section -7. HANDLING AND STORAGE

7.1 Handling:
No smoking, eating and drinking during handling.
Avoid exposure during pregnancy.
Keep containers tightly closed. Prior to movement containers which are opened should be carefully resealed.
Avoid skin and eye contact. Avoid inhalation in case of exposure to vapor and spray mist.
Handle and open containers with care to avoid spilling of contents. Never use pressure to empty; container is not a pressure vessel. Clean or discard contaminated clothing and shoes.
Preparation may charge electrostatically; always use grounding/ bonding/ earthing leads when transferring contents of containers. Operators should wear antistatic footwear and clothing, and floors should be electrically conductive.
Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapor in air, and avoid vapor concentration higher than the Occupational Exposure Limits.
Use in areas from which local sources of ignition have been excluded. Electrical equipment including lighting should be protected to the appropriate standard. Isolate from sources of heat, sparks and open flame. Non-sparking tools are recommended.

7.2 Storage:
Observe label precautions. Store between 32/F and 95/F (0/C and 35/C) in a dry, clean and well ventilated place, away from sources of heat, ignition, and direct sunlight. For flash points below 23 °C store in an area constructed to the appropriate standard

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Engineering measures:

Avoid the inhalation of vapors, spray mist and particulates. Achieve by local exhaust ventilation providing good general extraction as to keep air-borne concentration below the Occupational Exposure Limits (OEL).

If local / area ventilation is not sufficient to comply with OEL, suitable (NIOSH) respiratory protection to be provided. Always provide suitable (NIOSH) respiratory protection when sanding, grinding or otherwise abrading cured material.

8.2 Exposure limits

Work place exposure limits (8 hour)

Substance	ACGIH TLV
Lead Dioxide	TWA: 0.05 mg/m3
Lead oxide	TWA: 0.05 mg/m3
Terphenyl, Hydrogenated	TWA: 4.9 mg/m³ 8 hours
	TWA: 0.5 ppm 8 hours
Terphenyl	C: 5mg/m³
	C: 0.53 ppm
Zinc Stearate	10.00mg/m3

8.3 Personal protection

All Personal Protective Equipment, including Respiratory Protection, used to control exposure to hazardous substances must be selected to meet the requirements of OSHA Regulations.

Respiratory protection :

Appropriate respiratory protection equipment should be selected according to the type of contaminants, following regulatory (OSHA / NIOSH) and manufacturers instructions including proper fitting of devices.

Hand protection :

For prolonged or repeated contact, recommend gloves type: polyvinyl alcohol, nitrile rubber, latex rubber (some people may exhibit sensitivity to Latex). Barrier creams may help to protect exposed areas of the skin. However, they should not be applied post exposure.

Eye protection :

Use safety glasses with side shields to protect against splashes. Face shields may also be worn.

Skin protection :

Protective clothing made of antistatic and fire resistant fibers. All parts of the body should be washed after contact. Use good hygiene and industrial practices, keep working clothes clean.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at: 68 º F (20 º C) Liquid
- Flash point: 200 ° F (93 ° C) Method: TCC
- Specific gravity at: 68 ° F (20 ° C) N/A
- Vapor Density: N/A
- Lower Explosive Limit (% vol.): N/A
- Upper Explosive Limit '(% vol.): N/A
- Miscibility in water at 20 º C: NEGLIGIBLE
- Material Supports Combustion. : Yes
- Ph : N/A
- % VOLATILE BY VOLUME - N/A
- Vapor pressure at: 68 º F (20 º C) N/A
- Color: BROWN
- Appearance: PASTE
- Odor: NEGLIGIBLE OILY ODOR
- Boiling Point: N/A

10. STABILITY AND REACTIVITY

Stable under recommended storage and handling conditions (see SDS section 7). In case of combustion, may produce hazardous decomposition products such as :

- Carbon monoxide
- Sulfur oxides
- Carbon Dioxide
- Oxides of nitrogen
- Metal Oxide / Oxides
- Lead Oxides
- Smoke

11. TOXICOLOGICAL INFORMATION

There are no data available on the preparation itself. See (SDS Sections 3 and 15) for details.
Exposure to component solvents vapors at concentrations in excess of the stated Occupational Exposure Limits may result in adverse health

ACUTE TOXICITY:

PRODUCT:	RESULT	SPECIES	DOSE	EXPOSURE
Lead Dioxide	No Data Available			
	LD50 Intraperitoneal	Guinea Pig	220mg/kg	-
Lead Oxide	No Data Available			
Terphenyl,Hydrogenated	LD50 ORAL	Rat	17500 mg/kg	-
Terphenyl	LD50 Oral	Rat	>1400 mg/kg	-

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Skin Corrosion / Irritation
Lead Oxide - Rabbit - Mild Skin Irritation - 24Hours

Serious Eye Damage / Eye Irritation
Lead Oxide - Rabbit - No Eye Irritation

Germ Cell Mutagenicity
Lead Oxide - Hamster - Embryo - Morphological Transformation

CARCINOGENICITY:

INGREDIENT	IARC	OSHA	NTP
Lead Dioxide	2A	Specifically Regulated Carcinogen	Reasonably Anticipated to be Human Carcinogen
Lead Oxide	2A	Specifically Regulated Carcinogen	Reasonably Anticipated to be Human Carcinogen

Reproductive Toxicity
Lead Dioxide:
May cause congenital malformation in fetus-Known human reproductive toxicant

Lead Oxide:
May cause congenital malformation in fetus-Known human reproductive toxicant.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
Lead Oxide: May cause damage to organs through prolonged or repeated exposure.
Lead Dioxide: May cause damage to organs through prolonged or repeated exposure

OTHER INFORMATION CONCERNING LEAD SALTS:
Lead salts can cross the placenta and induce embryo- and feto- mortality. They also exhibit teratogenic effects in some animal species. Lead has been shown to exhibit adverse effects on human reproduction, embryonic and fetal development, and postnatal development.
Exposure to lead can affect the blood, nervous and digestive systems. Some of the symptoms of exposure include the following: anemia, neuromuscular dysfunction, paralysis, encephalopathy, joint and muscle pain, muscle weakness, headache, dizziness, abdominal pain, diarreah, constipation, nausea, vomiting, a blue line on the gums, insomnia, and a metallic taste. High levels of exposure produce increased cerebrospinal pressure, brain damage, and stupor which will lead to coma and death. Exposure to lead also produces anorexia and convulsions.

Lead Dioxide: Stomach-Irregularities - Based on human evidence
Lead Oxide: Stomach-Irregularities - Based on human evidence

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Harmful by Inhalation and / or Swallowing
Irritating to Eyes and Skin
May Cause An Allergic Skin Reaction
May Cause Cancer
May Damage Fertility or the Unborn Child
May Cause Damage to Organs Through Prolonged or Repeated Exposure

Potential chronic health effects include the following:
May cause damage to organs through prolonged or repeated exposure.
May lead to defatting of the skin and / or irritation.
May lead to allergic reactions.
May cause cancer.
May damage fertility and the unborn child

Target Organs: lungs, skin, central nervous system, blood, kidneys, nervous system, liver, spleen, lymphatic system, cardiovascular system, upper respiratory tract, bone marrow, digestive system, eye, lens, cornea

12. ECOLOGICAL INFORMATION

There is no data available on the preparation itself. Do not allow the product to enter drains or water ways. See (SDS Sections 3 and 15)

Toxicity:
Product
Lead Oxide - LC 50 - Pimephales promelas (fathead minnow) - 0.298mg/l - 96 hours
Lead Oxide - EC 50 - Daphnia Magna (water flea) - 0.132 mg/l - 48 hours

Biodegradability:
Lead Dioxide - Not readily Biodegradable
Lead Oxide - No data available

Bioaccumulative Potential:

Product	LogPow	BCF	Potential
No Data Available			

Mobility in Soil:
Not Available

Other environmental effects:
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Recommended incineration or land fill as hazardous waste per Federal, State and local regulations.
React with base and dispose of as hazardous waste per Federal, State and local regulations. Recommended incineration or land fill.

14. TRANSPORT INFORMATION

DOT US
UN number: 1872 Class: 5.1 Packing Group III
Proper Shipping Name: Lead Dioxide

IMDG
UN number: 1872 Class 5.1 Packing Group III
Proper Shipping Name: Lead Dioxide
Marine pollutant: Yes

IATA
UN number: 1872 Class: 5.1 Packing Group III
Proper Shipping Name: Lead Dioxide

NMFC: 4620 SUB.6 – CL.60
Schedule B # 3506.91.0000

15. REGULATORY INFORMATION

SARA 311/312
Composition of Ingredients :

Polyphenyls, quater and higher : Immediate (acute) health hazard

Terphenyl : Immediate (acute) health hazard

Lead Dioxide : No Data Available

Lead Oxide : No Data Available

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US Regulations Federal

chemical (s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 (SARA)	**Chemical Name**	**CAS No**	**Weight %**	**Threshold limit** (Reporting Value)
	Lead Dioxide	1309-60-0	70-80%	Unknown
	Lead Oxide	1317-36-8	<10%	Unknown

SARA notifications must remain attached to this SDS. Any copies and /or distribution of this SDS must include all SARA notifications.

All remaining Constituents are non-hazardous per FED-STD-313 All Constituents are listed in TSCA inventory; complete mixture is excluded Per TSCA Par. 710.4 (d) 95 (6) (7) Constituents are not listed in TSCA 12b CORR. LIST

US Regulations State

California Proposition 65 (Developmental – Female)	**Lead Dioxide**	1309-60-0	70-80%	>= 1.0%
Massachusetts	**Lead Dioxide**	1309-60-0	70-80%	>= 1.0%
New Jersey	**Lead Dioxide**	1309-60-0	70-80%	>= 1.0%
Pennsylvania	**Lead Dioxide**	1309-60-0	70-80%	>= 1.0%
Rhode Island	**Lead Dioxide**	1309-60-0	70-80%	>= 1.0%
California Proposition 65 (Developmental – Female)	**Lead Oxide**	1317-36-8	<10%	>= 1.0%
Massachusetts	**Lead Oxide**	1317-36-8	<10%	>= 1.0%
New Jersey	**Lead Oxide**	1317-36-8	<10%	>= 1.0%
Pennsylvania	**Lead Oxide**	1317-36-8	<10%	>= 1.0%
Rhode Island	**Lead Oxide**	1317-36-8	<10%	>= 1.0%

California Prop 65 Warning :

This product contains one or more ingredients known by the state of California to cause cancer, birth defects, or other reproductive harm.

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materials Division 2: Materials Causing Other Toxic Effects:
Lead Dioxide Cas#1309-60-0
Lead Oxide Cas# 1317-36-8

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR. Listed National Pollutant Release Inventory (NPRI):
Lead Dioxide CAS#1309-60-0, Lead Oxide CAS#1317-36-8

Section 16 Other Information

HEALTH	3	HEALTH	3
FLAMMABILITY	1	CHRONIC HEALTH HAZARD	*
REACTIVITY	1	FLAMMABILITY	1
		REACTIVITY	1

Customer and/or end user is responsible for determining PPE code.

NFPA **HMIS**

Full Text of H Statements Associated with this Compound:

May intensify fire; Oxidiser
Harmful by Inhalation and / or Swallowing
Irritating to Eyes and Skin
May Cause An Allergic Skin Reaction
May Cause Cancer
May Damage Fertility or the Unborn Child
May Cause Damage to Organs Through Prolonged or Repeated Exposure
Very Toxic to Aquatic Life with Long Lasting Effects

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Preparer-Flamemaster/Compliance Revision Notes: A Conversion to ANSI format
Rev A April 2015
Supercedes(Conversion)

Containers: Plastic Jars, Metal Cans, Cartridge Kits

Maximum Container Size: 50 Gallons/190 Liters

Notice to reader:
This SDS is provided without any warranty expressed or implied regarding its correctness or suitability for specific situations. The conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge.
In all cases, the user must determine the applicability of all information and recommendations contained herein as well as the suitability of this product for their own particular needs or purposes.
This product may be hazardous and should always be used with care and discretion. Every effort has been made to describe all known hazards, but this in no way guarantees the above mentioned hazards are the only hazards present.
Flamemaster Corporation, its Affiliates and its Agents, shall in no way be held liable for any damages resulting from handling, using, storing, disposing of, or from contact with this product. User assumes all risk.

END OF SAFETY DATA SHEET