

* * *Section 1 - IDENTIFICATION* * *

PRODUCT IDENTIFICATION

Material Name: Aluminum Paste

Grade Names: TCR 2040A; TCR 2050A; TCR 3010; TCR 3015A; TCR 3028A; TCR 3040; TCR 3041; TCR 3070A; TCR 3080; TCR 3130; TCR 3140; TCR 4010B; TCR 4040B; TCR 6020A; TCR 6060A; TSB 2044A; TSB 2145A; TSB 2180A; TSB 3150A

Product Use

Pigments and coatings manufacturing

Restrictions on Use

None known.

Manufacturer Information

Toyal America, Inc. 17401 South Broadway Lockport, IL 60441 USA Facility Phone: 815-740-3000

24 Hour Emergency Telephone:

1-800-424-9300 Chemtrec (USA & Canada) +1-703-527-3887 Chemtrec (International Call Collect)

General Comments

None

* * *Section 2 - HAZARDS IDENTIFICATION* * *

GHS Classification

Acute Toxicity (Inhalation), Category 4 Skin corrosion/irritation, Category 2 Eye Damage / Irritation, Category 2A Carcinogenicity, Category 2

Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory tract irritation; narcotic effects)

Specific Target Organ Toxicity - Repeated Exposure, Category 2 (nervous system)

GHS LABEL ELEMENTS Symbol(s)





Signal Word

WARNING

Hazard Statement(s)

Harmful if inhaled



Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

May cause dizziness or drowsiness

May cause damage to central nervous system through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

Keep away from heat/sparks/flames/hot surfaces-No smoking. Ground/bond container and receiving container. Do not breathe dust/mist/vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink, or smoke when using this product. Use personal protective equipment as required. Avoid release to the environment.

Response

IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. Specific treatment may be needed, see first aid section of Safety Data Sheet.

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

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash before re-use.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IN case of fire, use appropriate extinguisher to extinguish.

Collect spillage.

Storage

Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of material in accordance with all local, regional, national and international regulations.

Other Hazards which do not Result in Classification

None known.

* * *Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS* * *

CAS	Component	Percent
7429-90-5	Aluminum	70-85
8052-41-3	Stoddard solvent	5-12
64742-95-6	Petroleum naphtha, light aromatic	7-16
112-80-1	Oleic acid	1-3

The two solvent ingredients listed above, Stoddard Solvent (8052-41-3) and Petroleum Naphtha, Light Aromatic (64742-95-6), are complex mixtures (UVCB) with their own CAS numbers and registrations. The compounds listed below are identified by the manufacturers as constituents of these materials.



CAS	Constituents Contained in Stoddard Solvent (8052-41-3) and/or	Percent in Final		
	Petroleum naphtha, light aromatic (64742-95-6)	Product		
95-63-6	Benzene, 1,2,4-trimethyl-	<6.1		
25551-13-7	Trimethylbenzene, all isomers	<7		
1330-20-7	Xylenes (o-, m-, p- isomers)	<1.0		
98-82-8	Cumene (Carcinogenicity, Category 2)	<0.3		
100-41-4	Ethylbenzene (Carcinogenicity, Category 2)	<0.12		

* * *Section 4 - FIRST AID MEASURES* * *

Description of Necessary Measures

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention..

Symptoms: Immediate

Skin irritation, eye irritation, respiratory tract irritation, central nervous system effects

Symptoms: Delayed

Nervous system damage

* * *Section 5 - FIRE FIGHTING MEASURES* * *

Flammability Properties

If the solvent or additive has been removed, either by evaporation or burning, dry aluminum flake will remain. The aluminum particles will burn at a very high temperature as a mass of material or be potentially explosive if loosened and dispersed in air. Follow the listed fire fighting procedures carefully.

Suitable Extinguishing Media

Dry chemical or carbon dioxide in beginning stages. If solvent component has burned off, use Class D extinguishing agent or dry sand.

Unsuitable Extinguishing Media

Do not use halogenated extinguishing agents. Do not use water.

Special Hazards Arising from the Substance or Mixture

Hazardous Combustion Products

Combustion: oxides of aluminum, oxides of carbon



Special Fire Fighting Measures

An aluminum paste fire usually begins as a solvent fire. The solvent fire can be fought with Class "B" extinguishing agents. ***Halogenated or vaporizing liquids must never be used. *** If during the application of the Class "B" agent it becomes evident the fire has spread to become a powder fire, discontinue the use of the Class "B" and use either a Class "D" extinguisher or dry sand. If the aluminum metal has ignited, it should be gently covered with the sand or Class "D" agent and allowed to burn itself out under the crust. Once covered do not disturb until totally cooled. Suitable, commonly used Class "B" agents are dry chemical and carbon dioxide. Carbon dioxide may be used to extinguish fires involving solvent-wetted aluminum. However, re-ignition is possible due to high localized heat or spontaneous heating. To avoid re-ignition, the residual material must be immediately, gently smothered with a Class "D" extinguishing agent or dry sand without causing the material to become airborne. Refer to the Aluminum Association TR-2 Bulletin or NFPA 484 for further information.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

* * *Section 6 - ACCIDENTAL RELEASE MEASURES* * *

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Environmental Precautions

Avoid release to the environment. Collect spillage.

Methods for Containment and Cleaning up

Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Do not touch or walk through spilled material. Stop leak if possible without personal risk. Do not get water directly on material. Eliminate the generation of static electricity. Collect material into suitable container for disposal. Move containers away from spill to a safe area. **Do not form dust cloud.** Aluminum dust can be potentially explosive when dispersed in air in sufficient concentrations.

.Precautionary Measures to Prevent Secondary Hazards

No additional information is available.

* * *Section 7 - HANDLING AND STORAGE* * *

Precautions for Safe Handling

Do not breathe dust. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink, or smoke when using this product. Use only with adequate ventilation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Conditions for Safe Storage, Including Any Incompatibilities

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated place. Store in a cool, dry place. Store in a tightly closed container. Store locked up. Keep separated from incompatible substances.



* * *Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION* * *

Component Exposure Limits

Aluminum (7429-90-5)

ACGIH: 1 mg/m3 TWA (respirable fraction)

OSHA: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

Mexico: 10 mg/m3 TWA LMPE (dust)

Stoddard solvent (8052-41-3)

ACGIH: 100 ppm TWA

OSHA: 500 ppm TWA; 2900 mg/m3 TWA

NIOSH: 350 mg/m3 TWA

1800 mg/m3 Ceiling (15 min)

Mexico 100 ppm TWA LMPE; 523 mg/m3 TWA LMPE

200 ppm STEL [LMPE-CT]; 1050 mg/m3 STEL [LMPE-CT]

Light aromatic petroleum naphtha (64742-95-6)

ExxonMobil: 19 ppm RCP-TWA

100 mg/m3 RCP-TWA

Benzene, 1,2,4-trimethyl- (95-63-6)

ACGIH: 25 ppm TWA

NIOSH: 25 ppm TWA; 125 mg/m3 TWA

Trimethylbenzene isomers

ACGIH: 25 ppm TWA

NIOSH: 25 ppm TWA; 125 mg/m3 TWA

Xylenes (o-, m-, p- isomers)(1330-20-7)

ACGIH: 100 ppm TWA

150 ppm STEL

OSHA: 100 ppm TWA; 435 mg/m3 TWA

Mexico: 100 ppm TWA LMPE; 435 mg/m3 TWA LMPE 150 ppm STEL [LMPE-CT]; 655 mg/m3 STEL [LMPE-CT]

Cumene (98-82-8)

ACGIH: 50 ppm TWA

OSHA: 50 ppm TWA; 245 mg/m3 TWA- Skin notation

NIOSH: 50 ppm TWA; 245 mg/m3 TWA- Potential for skin absorption

900 ppm IDLH

Mexico: 50 ppm TWA LMPE-PPT; 245 mg/m3 TWA LMPE-PPT

75 ppm STEL [LMPE-CT]; 365 mg/m3 STEL [LMPE-CT]- Potential for cutaneous absorption

Ethylbenzene (100-41-4)

ACGIH: 20 ppm TWA

125 ppm STEL

OSHA: 100 ppm TWA

NIOSH: 100 ppm TWA; 435 mg/m3 TWA

125 ppm STEL; 545 mg/m3 STEL

800 ppm IDLH

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Mexico: 100 ppm TWA LMPE-PPT; 435 mg/m3 TWA LMPE-PPT

125 ppm STEL [LMPE-CT]; 545 mg/m3 STEL [LMPE-CT]

Biological Limit Values

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: 1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids

Ethylbenzene (100-41-4)

ACGIH: 0.7 g/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Sum of mandelic

acid and phenylglyoxylic acid (nonspecific, semi-quantitative); Medium: end-exhaled air Time: not

critical Parameter: Ethyl benzene (semi-quantitative)

Appropriate Engineering Controls

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

The appropriate eye/face protection must be determined by the user of the material, based upon the conditions of use. Safety glasses with side shields should be worn at a minimum. Chemical safety goggles provide a greater level of protection, and should be considered based upon the material's anticipated exposure levels. A face shield (in addition to safety goggles) should be considered when significant exposures are expected.

Skin Protection

Wear appropriate chemical resistant clothing.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

Use a full facepiece respirator for concentrations exceeding the occupational limits.

Protection provided by air-purifying respirators is limited.

Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any other circumstance where air-purifying respirators may not provide adequate protection.

* * *Section 9 - PHYSICAL AND CHEMICAL PROPERTIES* * *

Appearance: Silver paste

Physical State: Paste
Color: Silver

Odor: Organic solvent odor

Odor Threshold: Not available

pH: Not available

Melting Point:Not availableBoiling Point:266-398F (solvent)Flash Point:105F (solvent)

Evaporation Rate: <1.0 (butyl acetate = 1)

Flammability (solid, gas): Not available

Upper/lower explosive limits: LEL: 0.6% (solvent); UEL: 8.0% (solvent)

Vapor Pressure: <2.1 mm Hg @ 20C (solvent)

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Vapor Density: 4.2-5 (air =1) (solvent)

Relative Density: 1.2-2 (water =1)
Solubility: Not available

Partition coefficient: noctanol/water

Decomposition temperature:

Not available

Auto-ignition temperature:

Not available Not available

Viscosity: Not available

Other Property Information

*The product is considered a solid per ASTM D4359-84 for transportation purposes, therefore flashpoint is not applicable to the product itself.

* * *Section 10 - STABILITY AND REACTIVITY* * *

Reactivity

See sub-sections below.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Reacts violently with halogenated hydrocarbons and oxidizers to produce heat. Reacts with water and slowly generates heat and hydrogen gas. Aluminum reacts with acids or alkalis to form flammable hydrogen gas. Will not polymerize.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Take precautionary measures against static discharge.

Incompatible Materials

Water, acids, bases, combustible materials, oxidizing materials

Hazardous Decomposition

Combustion: oxides of aluminum, oxides of carbon

* * *Section 11 - TOXICOLOGICAL INFORMATION* * *

Likely Routes of Exposure

Eye Contact: Causes serious eye irritation. Symptoms may include pain or irritation, watering, and/or redness.

Inhalation: Harmful if inhaled. Can cause central nervous system depression. May cause dizziness or drowsiness. Symptoms may include nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

Skin Contact: Causes skin irritation. Adverse symptoms may include irritation, redness, and drying of the skin. **Ingestion:** Can cause central nervous system depression. Irritating to mouth, throat, and stomach. Adverse symptoms may include nausea or vomiting.

Acute and Chronic Toxicity

May cause eye, skin, and respiratory tract irritation. May cause drowsiness or dizziness. Contains small amounts of chemicals (cumene, ethylbenzene) that are classified as possibly carcinogenic to humans. May cause damage to nervous system through prolonged or repeated exposure.



Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Petroleum naphtha, light aromatic (64742-95-6)

Inhalation LC50 Rat >6193 mg/m3 4 h; Oral LD50 Rat 3492 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Oleic acid (112-80-1)

Oral LD50 Rat 25 g/kg

Benzene, 1,2,4-trimethyl- (95-63-6)

Inhalation LC50 Rat 18 g/m3 4 h; Oral LD50 Rat 3400 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Xylenes (o-, m-, p- isomers) (1330-20-7)

Inhalation LC50 Rat 5000 ppm 4 h; Inhalation LC50 Rat 47635 mg/L 4 h; Oral LD50 Rat 4300 mg/kg; Dermal LD50 Rabbit >1700 mg/kg

Cumene (98-82-8)

Oral LD50 Rat 1400 mg/kg; Inhalation LC50 Rat 39000 mg/m3 4 h; Dermal LD50 Rabbit >3160 mg/kg

Ethylbenzene (100-41-4)

Inhalation LC50 Rat 17.2 mg/L 4 h; Oral LD50 Rat 3500 mg/kg; Dermal LD50 Rabbit 15354 mg/kg

Immediate Effects

Skin irritation, eye irritation, respiratory tract irritation, narcotic effects.

.Delayed Effects

Nervous system damage,

Irritation/Corrosivity Data

Skin irritation, eye irritation, respiratory tract irritation

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Carcinogenicity

Component Carcinogenicity

Aluminum (7429-90-5)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Cumene (98-82-8)

IARC: Monograph 101 [2012] (Group 2B (possibly carcinogenic to humans))

Ethylbenzene (100-41-4)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans IARC: Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

Germ Cell Mutagenicity

No information available for the product.

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

Drowsiness or dizziness (CNS); Respiratory system irritation



Specific Target Organ Toxicity - Repeated Exposure

Central nervous system

Aspiration Hazard

Not expected to be an aspiration hazard.

Medical Conditions Aggravated by Exposure

None known.

* * *Section 12 - ECOLOGICAL INFORMATION* * *

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

Oleic acid (112-80-1)

Fish: 96 Hr LC50 Pimephales promelas: 205 mg/L [static]

Benzene, 1,2,4-trimethyl- (95-63-6)

Fish: 96 Hr LC50 Pimephales promelas: 7.19-8.28 mg/L [flow-through]

Invertebrate: 48 Hr EC50 Daphnia magna: 6.14 mg/L

Xylenes (o-, m-, p- isomers) (1330-20-7)

Fish: 96 Hr LC50 Pimephales promelas: 13.4 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus

mykiss: 2.661-4.093 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 13.5-17.3 mg/L; 96 Hr LC50 Lepomis macrochirus: 13.1-16.5 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 7.711-9.591 mg/L [static]; 96 Hr LC50 Pimephales promelas: 23.53-29.97 mg/L [static]; 96 Hr LC50 Cyprinus carpio: 780 mg/L [semi-static]; 96 Hr LC50 Cyprinus carpio: >780 mg/L; 96 Hr LC50 Poecilia

reticulata: 30.26-40.75 mg/L [static]

Invertebrate: 48 Hr EC50 water flea: 3.82 mg/L; 48 Hr LC50 Gammarus lacustris: 0.6 mg/L

Cumene (98-82-8)

Fish: 96 Hr LC50 Pimephales promelas: 6.04-6.61 mg/L [flow-through]; 96 Hr LC50

Oncorhynchus mykiss: 4.8 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 2.7

mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 5.1 mg/L [semi-static]

Algae: 72 Hr EC50 Pseudokirchneriella subcapitata: 2.6 mg/L

Invertebrate: 48 Hr EC50 Daphnia magna: 0.6 mg/L; 48 Hr EC50 Daphnia magna: 7.9 - 14.1 mg/L

[Static]

Ethylbenzene (100-41-4)

Fish: 96 Hr LC50 Oncorhynchus mykiss: 11.0-18.0 mg/L [static]; 96 Hr LC50 Oncorhynchus

mykiss: 4.2 mg/L [semi-static]; 96 Hr LC50 Pimephales promelas: 7.55-11 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 32 mg/L [static]; 96 Hr LC50 Pimephales promelas: 9.1-15.6 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 9.6 mg/L [static]

Algae: 72 Hr EC50 Pseudokirchneriella subcapitata: 4.6 mg/L; 96 Hr EC50

Pseudokirchneriella subcapitata: >438 mg/L; 72 Hr EC50 Pseudokirchneriella

subcapitata: 2.6 - 11.3 mg/L [static]; 96 Hr EC50 Pseudokirchneriella subcapitata: 1.7 -

7.6 mg/L [static]

Invertebrate: 48 Hr EC50 Daphnia magna: 1.8 - 2.4 mg/L

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.



Mobility in Soil

No information available for the product.

* * *Section 13 - DISPOSAL CONSIDERATIONS* * *

Disposal Methods

Dispose in accordance with all applicable regulations. Reprocess whenever possible. Co-process or incinerate in authorized facilities. Incineration should be done in accordance with prevailing municipal, state, and federal laws and standards from local environmental agencies.

Disposal of Contaminated Packaging

Dispose in accordance with all applicable regulations.

* * *Section 14 - TRANSPORT INFORMATION* * *

LAND TRANSPORTATION (DOT)

Not regulated as a hazardous material

SEA (IMDG)

Not regulated as a hazardous material Marine Pollutant: No

AIR (IATA)

Not regulated as a hazardous material

* * *Section 15 - REGULATORY INFORMATION* * *

U.S. Federal Regulations

SARA 313

	Max. % in Product			
Aluminum (7429-90-5) -dust or fume only	85%			
Benzene, 1,2,4-trimethyl- (95-63-6)	6.1%			
Xylenes (o-, m-, p- isomers) (1330-20-7)	1.0%			
Cumene (98-82-8)	0.3%			
Ethylbenzene (100-41-4)	0.12%			

CERCLA:

Xylene (1330-20-7) 100 lb final RQ; 45.4 kg final RQ as xylene; **Cumene (98-82-8)** 5,000 lb RQ as cumene; **Ethylbenzene (100-41-4)** 1000 lb RQ as ethylbenzene;



U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	Yes
Stoddard solvent	8052-41-3	Yes	Yes	Yes	Yes	Yes
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes
Oleic acid	112-80-1	No	No	No	No	Yes
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes
Cumene	98-82-8	Yes	Yes	Yes	Yes	Yes
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes

Canada

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

WHMIS CLASSIFICATION: D2A

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL.

Aluminum (7429-90-5)

1 %

Stoddard solvent (8052-41-3)

1 %

Benzene, 1,2,4-trimethyl- (95-63-6)

0.1 %

Oleic acid (112-80-1)

1 %

Cumene (98-82-8)

1%

Ethylbenzene (100-41-4)

0.1%

Inventory List Status

US TSCA: All components are listed or exempt. **Canada DSL**: All components are listed or exempt. **EINECS**: All components are listed or exempt.

Australia (AICS): All components are listed or exempt. Philippines (PICCS): All components are listed or exempt. Japanese Inventory: All components are listed or exempt. Korea Inventory: All components are listed or exempt.

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China Inventory: All components are listed or exempt. **New Zealand (NZIoC):** All components are listed or exempt.

Mexico (INSQ): All components are listed or exempt. **Taiwan (ECSI)**: All components are listed or exempt.

* * *Section 16 - OTHER INFORMATION* * *

History

Summary of Changes

Revision 1.0000, 28 October 2011: New MSDS.

Revision 2.0000, 19 January 2012

Revision 3.0000, 16 March, 2012: Revised Sections 2, 9, & 15

Revision 4.0000, 22 March, 2012: Revised Section 9

Revision 5.0000, 11 April, 2012: Revised Section 1 (added a trade name) Revision 6.0000, 25 July, 2012: Revised Sections 1, 2, 3, 8, 9, 11, 12, 15

Revision 7.0000, 27 February, 2014. Revised Section 8, 14, & 15

Revision 8.0000, 28 April, 2015: Revised to meet GHS format.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; CAS - Chemical Abstracts Service; EC50 - Effective Concentration, 50%; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LD50 - Lethal Dose, 50%; LEL - Lower Explosive Limit; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NIOSH - National Institute for Occupational Safety and Health; STEL - Short-term Exposure Limit; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UEL - Upper Explosive Limit

Other Information

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.

End of Sheet TA-001