

# SAFETY DATA SHEET

## GHS HCS-2012 §1910.1200

Version 4  
Product Name **Insoluble Sulfur HD OT20**  
(Rubber Vulcanizing Agent HD OT20)

Issue Date 31 March 2019  
Revision date 30 April 2019

*Read the entire SDS for a complete hazard assessment.*

### Section 1. Product and Company Identification

#### 1.1 Product Identifiers:

**Product Name:** Insoluble Sulfur HD OT20  
**Product Family:** Vulcanizing agent  
**Chemical Name:** Polymeric Sulfur Mixture  
**Synonyms:** RUBBER VULCANIZING AGENT HD OT20

CAS RN 9035-99-8      EC # 618-540-6

**1.2 Recommended use:** Vulcanizing agent

**1.3 Restricted Use:** Commercial use only

#### 1.4 Manufacturer and Supplier:

**Manufacturer**  
WUXI HUASHENG RUBBER TECHNICAL CO., LTD  
No. 18, Weiye Road, Quianqiao Town  
WUXI 214151, CHINA

After Hours Service: +86 510 83208255  
Phone: Non-emergency +86 510 83213718  
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Email: sales@huasheng-chem.com

**Distributor**  
R. E. Carroll, Inc.  
1570 North Olden Avenue  
Trenton, NJ 08638-3204  
Responsible Party: John Boruta  
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E-mail: [johnb@recarroll.com](mailto:johnb@recarroll.com)  
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#### 1.5 Emergency telephone number:

In the US: For a transport accident or leak, fire or major spill, call CHEMTREC, (800) 424-9300.  
For International CHEMTREC assistance, call 1-703-527-3887 (collect calls accepted).

### Section 2. Hazards Identification

#### 2.1 Globally Harmonized System (GHS) Hazard Classification:

OSHA Classification in accordance with 29 CFR 1910 (OSHA HCS): Hazardous. Combustible Dust.  
GHS Classification: Skin irritant Category 2.  
This SDS meets the requirements of GHS Revision 3.

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### 2.2 Label elements including precautionary:



**Symbol:**

**Signal word:**

Warning!

**Hazard Statement:**

May form combustible dust concentrations in air  
May irritate eyes, skin, and respiratory passages.

### Precautionary Statements

#### Prevention:

Wear protective gloves/protective clothing/eye protection/face protection.

Keep away from all ignition sources. No smoking. Prevent dust accumulations to minimize explosion hazard.

Use explosion-proof (electrical/ventilation/lighting) equipment. Use non-sparking tools.

Take action to prevent static discharge. Avoid release to the environment.

#### Response:

If exposed or concerned: Get medical advice/attention.

If in eyes: Immediately flush eyes thoroughly with water for several minutes. Remove contact lenses after one to two minutes and continue flushing for several more minutes. If redness, itching or burning sensation develops, seek medical attention.

If on skin: Wash with plenty of soap and water. If irritation or rash occurs: Get medical advice/attention.

If inhaled: Remove victim to fresh air. If a cough or other respiratory symptoms develop, consult medical personnel.

If swallowed: DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Gently wipe or rinse the inside of the mouth with water. Sips of water can be given. If symptoms persist, contact a poison control center, emergency room, or physician for treatment information.

#### Storage:

Store in accordance with applicable local, regional, national, and international regulations.

Ground/bond container and receiving equipment.

#### Disposal:

Dispose of contents/container in accordance with local, regional, national, international, regulations.

2.3 **Other hazards that are not included in the classification criteria:** Hot process fumes may give off vapors that cause respiratory irritation.

### Section 3. Composition/Information on Ingredients

**Chemical nature:**

Pure substance

**Chemical Name**

**CAS No**

**Weight-%**

Sulfur, homopolymer

9035-99-8

79-81

Distillates (petroleum), hydrotreated heavy naphthenic

64742-52-5

19-21

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### Section 4. First-Aid Measures

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

#### 4.1 Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Consult medical attention.

#### 4.2 Skin contact:

Wash skin with plenty of soap and water. If symptoms persist, seek medical attention. Wash contaminated clothing before use.

#### 4.3 Eye contact:

Immediately flush eyes thoroughly with water for several minutes. Remove contact lenses after one to two minutes and continue flushing for several more minutes. If redness, itching or burning sensation develops, seek medical attention.

#### 4.4 Ingestion:

DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Gently wipe or rinse the inside of the mouth with water. Sips of water can be given. If symptoms persist, contact a poison control center, emergency room, or physician for treatment information.

#### 4.5 Acute and delayed symptoms/effects:

**Eye Contact:** Excessive exposure may cause temporary irritation to eyes.

**Skin Contact:** Repeated/prolonged contact may cause itching and redness.

**Ingestion:** Harmful effects not anticipated from swallowing small amounts. May be harmful in large amounts.

**Inhalation:** Excessive exposure may cause irritation to respiratory tract.

**Chronic health effects:** This product has no known chronic effects.

**Relevant routes of exposure:** Eye, skin, inhalation.

#### 4.6 Indication of immediate medical attention and notes for physicians:

Persons with pre-existing skin, eye, or respiratory conditions may be at an increased risk from the irritant properties of this material. Attending physician should treat exposed patients symptomatically.

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### Section 5. Fire-Fighting Measures

#### 5.1 Extinguishing media:

##### Suitable extinguishing media:

Use extinguishing media appropriate to surrounding fire and to protect personnel. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents.

##### Unsuitable extinguishing media:

For this product, no limitations of extinguishing agents are given. Forceful application of fire extinguishing agents or water spray may spread burning material.

#### 5.2 Special hazards arising from the chemical:

##### Unusual fire and explosion hazards:

Combustible material. The substance burns with almost invisible flame. Dust may present a explosion hazard.

##### Hazardous Combustion Products:

During a fire, toxic and/or corrosive gases may form including sulfur oxides, carbon oxides and hydrogen sulfide May cause delayed lung injury.

#### 5.3 Special protective equipment and precautions for firefighters:

##### Fire Fighting Procedures:

Keep personnel away. Isolate fire and deny unnecessary entry. Do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone. Dust explosion hazard may result from forceful application of fire extinguishing agents. Prevent runoff from fire control or dilution from entering waterways or sewers.

##### Special Protective Equipment for Firefighters:

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

### Section 6. Accidental Release Measures

#### 6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Remove all sources of ignition. Avoid breathing vapors, mist, or gas. Avoid skin and eye contact. Evacuate personnel to safe areas. Spilled material may cause a slipping hazard. Use appropriate safety equipment. See Section 8 for information on personal protection equipment.

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### 6.2 Environmental precautions and protective procedures:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains, sewers, waterways, and/or groundwater.

### 6.3 Methods and material for containment and cleaning up:

Contain spilled material if possible. Sweep up using non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

**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:

Fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. Follow procedures specified in the National Fire Protection Association Codes and Standards for handling combustible dusts. No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. When transferring material, use proper grounding to avoid electrical sparks. Minimize vertical drop distances in chutes and hoppers to prevent generation of dust clouds and electrostatic charge. Totally or partially inert closed equipment to reduce oxygen content to below 7%.

Avoid breathing process fumes. Use with adequate ventilation. Do not eat, drink, and/or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

### 7.2 Conditions for safe storage (including any incompatibilities):

Store in a cool place. Avoid sunlight, heat and ignition sources. Keep container tightly closed in a dry and well-ventilated place. Keep away from oxidizing materials, food drink or animal feeds.

Dust may present an explosion hazard. Store in accordance with good manufacturing practices.

## Section 8. Exposure Controls and Personal Protection

Consult with a Health and Safety Professional for specific selections.

### 8.1 Control parameter:

### OCCUPATIONAL EXPOSURE LIMITS:

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**Sulfur**- Inhalable particles. TWA 10 mg/m<sup>3</sup> US. ACGIH Threshold Limit Values

**Sulfur**- Respirable particles. TWA 3 mg/m<sup>3</sup> US. ACGIH Threshold Limit Values

**Sulfur**- Respirable fraction. PEL 5 mg/m<sup>3</sup> US. OSHA Table Z-1 Limits for Air Contaminants

**Sulfur**- Total dust. PEL 15 mg/m<sup>3</sup> US. OSHA Table Z-1 Limits for Air Contaminants

**Sulfur**- Respirable fraction. TWA 5 mg/m<sup>3</sup> US. OSHA Table Z-1-A

**Sulfur**- Total dust. TWA 15 mg/m<sup>3</sup> US. OSHA Table Z-1-A

**Hydrotreated heavy naphthenic petroleum distillates** - PEL 500 ppm 2,000 mg/m<sup>3</sup> US. OSHA Table Z-1 Limits for Air Contaminants

**Hydrotreated heavy naphthenic petroleum distillates** - Mist. PEL 5 mg/m<sup>3</sup> US. OSHA Table Z-1 Limits for Air Contaminants

**Hydrotreated heavy naphthenic petroleum distillates** - Inhalable fraction. TWA 5 mg/m<sup>3</sup> US. ACGIH Threshold Limit Values (03 2014)

### Appropriate engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks. Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, for safe handling.

### 8.2 Personal protective equipment:

#### Eye protection:

Use safety glasses. If there is a potential for exposure to mists that could cause eye discomfort, wear chemical goggles, or use a full-face respirator.

**Body protection:** Wear clean body-covering clothing to prevent skin exposure.

#### Hand protection:

Contact should be minimized. Protective gloves are recommended when skin contact cannot be avoided. The glove(s) listed may provide protection against permeation (gloves of other chemically resistant materials may not provide adequate protection): Polyethylene, Polyvinyl chloride (PVC), Neoprene, Nitrile, Polyvinyl alcohol, Viton. Selection of gloves will depend on the task. Use thermally resistant gloves and long sleeves when handling molten product.

#### Respiratory protection:

Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Respiratory protection is not usually needed unless product is heated or misted. Half-mask air purifying respirator with dust mist filters or HEPA filter cartridges is acceptable for exposures to ten (10) times the exposure

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limit. Full-face air purifying respirator with dust mist filters or HEPA filter cartridges is acceptable for exposures to fifty (50) times the exposure limit. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures greater than fifty (50) times the exposure limit. If exposure is above the IDLH (Immediately Dangerous to Life and Health), or there is the possibility of an uncontrolled release, or exposure levels are unknown, then use a positive pressure-demand full-face supplied air respirator with escape bottle or SCBA. Wear a NIOSH-approved (or equivalent) full-face piece airline respirator in the positive pressure mode with emergency escape provisions.

### Other:

Remove contaminated clothing and wash before reuse. Have eyewash station in work area. Do not consume or store food in the work area. Wash hands before smoking or eating.

### Section 9. Physical and Chemical Properties

Section 9: Physical and Chemical Properties List	
Appearance	Powder
Physical state	Solid
Color	Yellow
Odor	Characteristic, Faint
Odor Threshold	NA
Auto-ignition Temperature	232 °C
Decomposition Temperature	ND
Bulk Density	350 - 550 kg/m <sup>3</sup>
Specific Gravity:	approx. 1.61 (20 °C)
Evaporation Rate	ND
Flammability (solid, gas)	Vapor produces combustible mixture with air
Flash Point	157 °C/314.6°F (Cleveland open cup)
Dust Explosion Limit, Upper:	2000 g/m <sup>3</sup>
Dust Explosion Limit, Lower:	30 g/m <sup>3</sup>
Dust deflagration index (Kst)	40.7 m.b./sec
Dust Explosion Class:	St 1 (weak explosion)
Minimum ignition energy	45mJ
pH	NA
Melting point	90-119 °C/194-246.2°F
Partition coefficient n-octanol/water	NA
Relative Density	NA
Solubility (water);	insoluble in water
Solubility (other)	ND
Vapor pressure	ND
Viscosity	NA
Vapor Density	ND
% volatile	< 1%

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NA = Not applicable ND = No data. Remarks: The above information is not intended for use in preparing product specifications, Contact RE Carroll before writing specifications.

### Section 10. Stability and Reactivity

**10.1 Chemical stability:** Stable under normal temperature conditions and recommended use.

**10.2 Possibility of hazardous reactions:** No hazardous reactions if stored and handled as prescribed/indicated.

**10.3 Conditions to avoid:** Avoid high temperatures. Avoid strong oxidizing agents and strong reducing agents. Avoid dust buildup static discharge, sparks. Avoid moisture.

**10.4 Incompatible materials:** Oxidizing materials, acid chlorides, and anhydrides. Strong acids. Strong bases. Oxidizing agents. Reducing agents. Sulfenamide rubber accelerators.

**10.5 Hazardous decomposition products:**

Sulfur burns to form sulfur oxides. Sulfur reactions with hydrocarbons and other organic materials may produce hydrogen sulfide and carbon disulfide. Other products of incomplete combustion may form depending upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. Fumes can be irritating.

**10.6 Hazardous Polymerization:** Will not occur.

### Section 11. Toxicological Information

**11.1 Information on the likely routes of exposure:** Inhalation, ingestion, skin and eye contact.

**11.2 Information on toxicological effects:**

**Acute toxicity: Sulfur:**

LD50 Oral (Rat):	> 3000 mg/kg OECD 401 Acute oral toxicity
LD50 Inhalation (Rat):	> 9.23 mg/l 1 hr estimated
LD50 Dermal, (Rabbit):	> 2000 mg/kg bw OECD 402 Acute dermal toxicity
Eye Irritant	0.5 score (Mild eye Irritant) Rabbit fully reversible in 7 days
Human patch studies	No skin sensitization
Ames Test	Negative
Gene Mutation in vitro	No effects reported
Mammalian Chromosomal	Negative
Chromosomal Aberration	Negative
Micronucleus assay	Negative
Cytogenetic assay	Negative

**Aspiration or inhalation:** Not expected

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Not for medical use. Contact supplier for medical or food use.

### GHS Classification:

**Skin corrosion/irritation:** GHS Classification: Classified category 2.

**Serious eye damage/irritation:** GHS Classification: Not Classified.

**Inhalation:** GHS Classification: Not Classified.

**Respiratory or skin sensitization:** GHS Classification: Not Classified.

**Germ Cell Mutagenicity:** GHS Classification: Not Classified.

**Reproductive Toxicity:** GHS Classification: Not Classified.

**Teratogenicity:** GHS Classification: Not Classified.

### Specific target organ toxicity (STOT):

STOT-single exposure: The substance is not classified as specific target organ toxicant, single exposure.

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

### 11.3 Carcinogenicity:

This product does not contain any material at > 0.1% that is listed by IARC, NTP, EPA, ACGIH, or OSHA as a carcinogen.

### 11.4 Chronic Exposure: None known

### 11.5 Potential Health Effects:

Negligible hazard at ambient temperature (-18 to 38 Deg C; 0 to 100 Deg F) Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract. Vapors and/or aerosols which may be formed at elevated temperatures may cause systemic effects.

### 11.6 Special Precautions:

Irritating and toxic hydrogen sulfide gas may be found in confined vapor spaces. Continuous exposure greater than 15 - 20 ppm can cause mucous membrane and respiratory tract irritation. Exposures of 50 - 500 ppm can cause headache, nausea, and dizziness, loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500 ppm can cause rapid or immediate unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and successfully resuscitated.

The "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure, since olfactory fatigue (loss of smell) readily occurs, especially at concentrations above 50 ppm. At high concentrations, the victim may not even recognize the odor before becoming unconscious.

## Section 12. Ecological Information

### 12.1 Toxicity sulfur

Fish LC50: Danio rerio (zebra fish): 866 mg/l; 96 h

Aquatic Invertebrates: EL50 (Daphnia magna (Water flea)) > 10,000 mg/l; 24 h

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Toxicity to bacteria EC50 activated sludge: 1,900 mg/l; 3 h ISO 8192

**12.2 Product Aquatic and terrestrial ecotoxicity:** Product is toxic to aquatic life.

**12.3 Product Mobility:** Expected to be relatively immobile in soil

**12.4 Product Persistence/ Bioaccumulation:**

Persistence is expected due to low solubility, but not bioaccumulation.

**12.5 Product degradability:**

Not expected to be readily degradable in soil or water.

**12.6 Other:** No other information.

### Section 13. Disposal Considerations

#### 13.1 Disposal methods:

Uncontaminated discarded product is not a hazardous waste under RCRA. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification. Do not dump into any sewers, on the ground or into any body of water. All disposal practices must comply with all federal, state, and local laws and regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.

#### 13.2 Container disposal:

Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue. Puncture or otherwise destroy empty container and dispose of in a facility permitted for nonhazardous waste.

### Section 14. Transport Information

**DOT:** Class not regulated.

**IATA:** Class not regulated.

**IMDG/IMO:** Class not regulated.

**Proper shipping name:** Not relevant.

This product is not a marine pollutant as defined in 40 CFR Part 172.

**Special Precautions for User:** None specified.

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### Section 15. Regulatory Information

#### U.S. Regulations

##### 15.1 US TSCA inventory:

All chemical substances in this product comply with all rules or orders under TSCA. All intentionally added ingredients either are listed on the TSCA Inventory list or exempt from listing.

##### 15.1 SARA Section 311/312 Hazard Categories

Acute Hazard: yes  
Chronic Hazard: No  
Fire Hazard: Yes  
Reactive Hazard: No  
Sudden Pressure Release: No

##### 15.2 CERCLA Hazardous Substance SARA Section 304 Release Reporting:

<u>Component(s)</u>	<u>Reportable Quantity</u>	<u>Min</u>	<u>Max</u>
<u>CAS Number</u>	<u>Threshold</u>		
None			

##### 15.3 SARA Section 302 Extremely Hazardous Substances:

<u>Component(s)/</u>	<u>Concentration</u>
<u>CAS Number</u>	<u>Min</u> <u>Max</u>
None	

##### 15.4 SARA Section 313 Toxic Chemicals:

<u>Component(s)/</u>	<u>Reporting</u>	<u>Concentration</u>
<u>CAS Number</u>	<u>Threshold</u>	<u>Min</u> <u>Max</u>
None		

##### 15.5 California Proposition 65:

This product is not known to contain chemical(s) known to the State of California to cause cancer or reproductive harm. Residual monomer: none detected.

**15.6 Pennsylvania Worker and Community Right To Know Act:** Yes.

**15.7 New Jersey Worker and Community Right To Know Act:** Yes.

**15.8 Massachusetts Right To Know Act:** Yes.

**15.9 Rhode Island RTK:** No hazardous materials listed.

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### 15.10 International Regulations:

#### Canadian Regulations:

WHMIS Statement: This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations*. This product is classified as controlled in accordance with the Canadian Controlled Products Regulations.

#### International Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS/NICNAS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada Non-	Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCs/MITI)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Mexico	National Inventory of Chemical Substances (INSQ)	NA
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
Switzerland	Environmental Hazardous Substance list in Switzerland	NA
Taiwan	Taiwan Inventory (National Existing Chemical (NECI)	NA
China	China National Inventory (IECSC)	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**CONEG:** These products comply with the heavy metals requirements of the **Coalition of Northeastern Governors and California Toxics In Packaging Prevention Act (AB2021)**.

**Ozone Depleting Substances:** none reportable, in compliance with 40 CFR 82.

**European Hazardous Chemicals:** none reportable, in compliance with 67/548/EEC, 76/769/EEC, 1999/45/EC, 2002/95/EC (RoHS), 2002/96/EC (WEEE). These substances are not dangerous according to EC Directives.

### Section 16. Other Information

#### 16.1 NFPA and HMIS Hazard Ratings:

We assigned NFPA and HMIS ratings to this product based on the hazards of its ingredient(s). Because the customer is most aware of the application of the product, the customer must ensure that the proper personal protective equipment (PPE) is provided consistent with information contained in the product SDS. This information is intended solely for the use of individuals trained in the particular hazard rating system.

Key: 0 = least, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

#### NFPA (National Fire Protection Association) - Classification

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Health 1 = Materials that, on intense or continued (but but chronic) exposure, could cause temporary incapacitation or possible residual injury, including those requiring the use of respiratory protective equipment that has an independent air supply.

Flammability 1 minimal

Instability or Reactivity 0 minimal

Special Hazards none

**HMIS® [Hazardous Materials Identification System (Paint & Coating)] - Classification**

Health 1 slight

Flammability 1 minimal

Reactivity 0 minimal

NFPA, HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered. This information is supplied solely for the use of individuals trained in the particular hazard rating system.

### 16.2 Revision information:

Date of the previous revision: 15 April 2019 (Version 03)

Date of this revision: **30 April 2019** (Version 04)

Revision summary: Revised format to show transportation requirements

**16.3 Training advice:** Provide adequate information, instruction and training for operators.

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

ACGIH	American Conference of Governmental Industrial Hygienists
BEI	Biological Exposure Index
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
ppm	parts per million
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
REL	Recommended exposure limits from NIOSH
Action Level	An exposure value set by OSHA that is lower than the PEL that will trigger the need for activities
NIOSH	National Institute for Occupational Safety and Health such as exposure monitoring and medical surveillance.

### 16.5 Declare to reader:

This Safety Data Sheet conforms to US GHS (Revision 3) Hazcom 2012.

The opinions expressed herein are those of qualified experts within R.E. Carroll, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and of these

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opinions and the conditions of use of this product are not within the control of R.E. Carroll, Inc., it is the user's obligation to determine the conditions of safe use of the products.

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**END OF SDS**

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