SECTION 1: Identification

Product identifier used on the label: Telene® 1650B

Other means of identification: 904T1650B0J5, 941T1650B0IB

Chemical Abstract Number (CASRN): Mixture

Recommended use of the chemical: RIM (Reaction Injection Molding) Applications

Restrictions on use: None

Details of the supplier of the safety data sheet

Manufacturer/Supplier Name and Address:
Zeon Specialty Materials Inc.
25 Metro Drive #238
San Jose, CA 95110
USA
www.zeonsmi.com

Customer Service: +1-408-641-7889
+1-408-516-9382

Email address of person responsible for this SDS: productstewardship@zeonsmi.com

Emergency telephone number

24 hours per day/7 days per week: 3E Global Response Hotline: 1 866 519 4752 (+1 760 476 3961) / Customer Code 335467

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200 (HCS 2024): This product is classified as hazardous under 29 CFR 1910.1200 (Hazard Communication).

GHS Classification of the substance or mixture:

Hazardous to the aquatic environment - Chronic Category 2

Hazardous to the aquatic environment - Acute Category 1

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

Reproductive Toxicity Category 2

Serious Eye Damage/Eye Irritation Category 2A

Skin Corrosion/Irritation Category 2

Acute Toxicity - Oral Category 4

Acute Toxicity - Inhalation Vapour Category 3

Flammable Liquid Category 3

GHS Label Elements

GHS Signal Word: Danger

GHS Label Pictogram:

GHS Hazard Statements:
H411 - Toxic to aquatic life with long lasting effects.
H400 - Very toxic to aquatic life.
H335 - May cause respiratory irritation.

H361 - Suspected of damaging fertility or the unborn child.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H331 - Toxic if inhaled.
H226 - Flammable liquid and vapour.

Precautionary Statements (Safety):

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P264 - Wash thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P271 - Use only outdoors or in a well-ventilated area.
P243 - Take precautionary measures against static discharge.
P242 - Use only non-sparking tools.
P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.
P240 - Ground/bond container and receiving equipment.
P233 - Keep container tightly closed.
P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P273 - Avoid release to the environment.

Precautionary Statements (First Aid):

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 - Rinse mouth.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P362 - Take off contaminated clothing and wash before reuse.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P370+P378 - In case of fire: Use carbon dioxide, dry chemical or water fog for extinction. Collect spillage.

Precautionary Statements (Disposal):

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Precautionary Statements (Storage):

P403+P235 - Store in a well-ventilated place. Keep cool.
P233 - Keep container tightly closed.

Other hazards: None known

This mixture consists of ingredient(s) of unknown acute toxicity at the following percentage (%): 9

Hazards Not Otherwise Classified: None

Hazards Identified When Used: Substance can be absorbed through the skin. Unstable at temperatures above 122 °F (50 °C). May self-react at temperatures above 176 °F (80 °C) Toxic gases may be formed upon combustion and represent a hazard to firefighters.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Hazardous Chemical(s)	%	CAS#	GHS Classification	M-Factor
Dicylopentadiene (CP Dimer)	80 - 100	77-73-6	Flammable Liquid Category 2 Acute Toxicity - Inhalation Vapour Category 2 Acute Toxicity - Oral Category 4 Skin Corrosion/Irritation Category 2 Serious Eye Damage/Eye Irritation Category 2 Reproductive Toxicity Category 2 Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3 Aspiration Hazard Category 1 Hazardous to the aquatic environment - Acute Category 1 Hazardous to the aquatic environment - Chronic Category 2	M = 1
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	0.1 - 1	128-37-0	Hazardous to the aquatic environment - Acute Category 1 Hazardous to the aquatic environment - Chronic Category 1	M = 1

Section Comments: Any concentration shown as a range is to protect product confidentiality or is due to batch to batch differences.

SECTION 4: First-aid measures

Description of first aid measures

Following Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Following Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Following Eye Contact:	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Following Ingestion:	If ingested, call your local Poison Control Center (1-800-222-1222 in the U.S.) or physician. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed

Causes serious eye irritation. Causes skin irritation. Substance can be absorbed through the skin. Harmful if swallowed. Ingestion may cause irritation of throat, stomach and gastrointestinal tract. Prolonged or repeated exposure may cause liver and kidney damage. H361 - Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed

No additional first aid information available

SECTION 5: Fire-fighting measures

Extinguishing media

For small fires, use carbon dioxide, dry chemical, or water spray. For large fires, use aqueous foam or water fog. Water spray may be used to cool containers exposed to fire. , If water is used, flood area with water.

Special hazards arising from the substance or mixture

Flammable. Keep away from sources of ignition. Use bonding and grounding when transferring quantities of material. Vapors are heavier than air and can travel to a source of ignition and flash back. Closed containers may rupture due to pressure build up during fire conditions. Toxic gases may be formed upon combustion and represent a hazard to firefighters. Combustible dust clouds may be created where operations produce dust. Product fines and trimmings pose a serious risk of combustible dust explosion or fire. Product fines are VERY sensitive to ignition. Minimize dust generation and accumulation, especially on horizontal surfaces and duct work. Handling and processing of product fines and trimmings should be conducted in accordance with NFPA-654 or similar best practices. Fines and shavings from molded Telene® parts are subject to oxidation and self-ignition. Accumulation of these materials in a pile or in confined containers, such as a box, drum, vacuum canister or dumpster, may cause rapid decomposition and self-ignition. Store fines, shavings and other Telene® debris below 55°C. Prevent accumulation of dust, fines and grindings in the workplace. Shavings, fines and dust must be cooled before collection and disposal. Store fines and shavings under polyethylene glycol or similar inert liquid to prevent decomposition and self-ignition. See Telene® Process Book version VB - AP - 2017/12 and Telene® Process Safety Document reference VC (VC - NN/PV - 2021/07).

Hazardous combustion products

Hydrocarbons, Carbon dioxide, Carbon monoxide, Nitrogen oxides, Hydrogen Chloride

Advice for firefighters

As in any fire, wear self-contained breathing apparatus operated in pressure-demand mode (NIOSH approved or equivalent) and full protective gear.

Water runoff can cause environmental damage. Dike and collect water used to fight fire.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Follow personal protective equipment recommendations found in Section 8. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limit. Wear suitable protective clothing, gloves and eye/face protection. Avoid breathing material. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Environmental precautions

Prevent the spread of any spill to minimize harm to human health and the environment. Do not allow the spilled product to enter public drainage system or open waterways. Do not walk through spilled material. Clean up spills immediately.

Methods and material for containment and cleaning up

Remove sources of ignition. Use spark-proof tools and explosion-proof equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain the discharged material. Recover as much as possible for reuse. Do not flush to sewer. Absorb remainder with an inert material such as sand or clay. Wash spill area with soap and water. Notify appropriate authorities if liquid enters sewers or other public waters.

Reference to other sections

Refer to Section 8, Exposure Control/Personal Protection.

SECTION 7: Handling and storage

Precautions for safe handling

P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. Use with adequate ventilation. Respiratory protection may be required. P272 - Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse. Do not eat, drink or smoke in processing areas. Wash thoroughly after handling. Take precautionary measures against static discharges. Use bonding and grounding when transferring quantities of material. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose container to heat, flame, sparks, static electricity, or other sources of ignition.

Conditions for safe storage, including any incompatibilities

Store between 0°C and 40°C. Follow storage requirements for flammable liquids as described in 29 CFR 1910.106 or equivalent. Store in original shipping container and keep tightly sealed. Store in a cool, dry, well-ventilated area away from incompatible substances (refer to Section 10). Protect from heat, spark and other sources of ignition. Store, transport, load, and unload at atmospheric pressure under inert atmosphere to maintain product quality. Containers exposed to heat or sunlight may build pressure. Conduct regular inspection of storage areas. Open containers slowly. Dicyclopentadiene begins to solidify at temperatures below –7ºC could self-ignite if exposed to air. Store in a metallic container. May form explosive peroxides if exposed to air. Store under nitrogen or other inactive gas. Containers should be hermetically sealed when not in use. Fines and shavings from molded Telene® parts are subject to oxidation and self-ignition. Accumulation of these materials in a pile or in confined containers, such as a box, drum, vacuum canister or dumpster, may cause rapid decomposition and self-ignition. Store fines, shavings and other Telene® debris below 55°C. Prevent accumulation of dust, fines and grindings in the workplace. Shavings, fines and dust must be cooled before collection and disposal. Store fines and shavings under polyethylene glycol or similar inert liquid to prevent decomposition and self-ignition. See Telene® Process Book version VB - AP - 2017/12 and Telene® Process Safety Document reference VC (VC - NN/PV - 2021/07).

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters:

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended:

	OSHA			ACGIH	
	PEL	AL	STEL	TLV	STEL
Dicylopentadiene (CP Dimer)	NE	NE	NE	5 ppm TWA 0.5 ppm (2.7 mg/m3) TWA	1 ppm (4.5 mg/m3)
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	NE	NE	NE	2 mg/m3 TWA (IFV)	NE

PEL = Permissible Exposure Limit; AL = Action Limit; NE = Not Established; RD = Respirable Dust; STEL = Short Term Exposure Limit; TD = Total Dust; TLV = Threshold Limit Value, I = Inhalable Fraction, TWA = Time Weighted Average

Exposure controls

Appropriate Engineering Controls: Explosion proof exhaust ventilation should be used. Local exhaust ventilation, process enclosures, or other engineering controls are imperative when handling or using this product to avoid overexposure.

Individual Protection Measures

Eye/Face Protection: Wear eye personal protective equipment selected and used in accordance with the OSHA requirements at 29 CFR section 1910.133. If contact is anticipated, wear chemical splash goggles. Additionally, if splashing is possible, wear a full face shield.

Hand Protection: Wear impervious gloves selected and used in accordance with the OSHA requirements at 29 CFR section 1910.138. Wash thoroughly after handling.

Skin and Body Protection: Wear dermal personal protective equipment selected and used in accordance with the OSHA requirements at 29 CFR section 1910.132. Wear long sleeves and gloves to prevent skin contact. Remove contaminated clothing and wash before reuse.

Respiratory Protection A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 or equivalent requirements must be followed whenever workplace conditions warrant a respirator's use. Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical State:	liquid
Color:	Black
Odor:	Slight Camphor
Odor Threshold:	0.003 - 0.2 ppm
pH:	Not Determined
Melting Point/Freezing Point:	23°F (-5°C)
Initial Boiling Point and Boiling Range:	>170°C
Flash Point:	41 - 45°C
Evaporation Rate (water = 1):	>1
Flammability (solid/gas):	Not Applicable
Particle Characteristics (median particle size):	Not Applicable
Lower Explosive (Flammable) Limit:	~1%
Upper Explosive (Flammable) Limit:	~7%
Vapor Pressure:	1.4 mmHg @ 20 ºC
Vapor Density (Air=1):	4.50
Relative Density (water = 1):	0.98
Solubility (water):	Dicyclopentadiene/water: 40 mg/L (temperature unknown)
Partition Coefficient: n-octanol/water:	2.89 (Dicyclopentadiene) 3.39 (5-vinyl-norbornene)
Autoignition Temperature:	510°C
Decomposition Temperature:	Not Determined
Kinematic Viscosity:	150 – 450 mPa.s

SECTION 10: Stability and reactivity

Reactivity

Telene® RIM Resin Component A and Component B are designed to be mixed together under controlled conditions in properly designed and operated reaction injection molding systems to produce a reacted polymer. The molding process releases volatiles such as cyclopentadiene, dicyclopentadiene, trace of antioxidants, trace of 1.3-DCP, nitrogen, and norbornene monomer at temperatures significantly above their flash point. Upon heating, DCPD may convert into the monomer cyclopentadiene. Well ventilated conditions are necessary to eliminate hazard risk. There is risk of runaway reaction at temperatures exceeding 80°C. Never handle at temperatures exceeding 50°C and never condense the promoter. Consult with your technical service representatives for processing information.

Chemical stability

Unstable at temperatures above 122 °F (50 °C). May self-react at temperatures above 176 °F (80 °C)

Possibility of hazardous reactions

Distillation to dryness may produce explosive peroxides. Mixing of Telene® RIM Resin Component A and Component B in non-molding operations may cause an uncontrolled exothermic reaction generating heat above 200°C and releasing vapors such as ethane (flammable) and nitrogen. Metal chloride salts or heat can catalyze polymerization.

Conditions to avoid

Sparks, open flame, other ignition sources, and elevated temperatures; Overheating; Avoid long-term temperatures above 50 ºC to prevent polymerization.; Dicyclopentadiene begins to solidify at temperatures below –7ºC could self-ignite if exposed to air. Store in a metallic container. May form explosive peroxides if exposed to air. Store under nitrogen or other inactive gas. Containers should be hermetically

	sealed when not in use.; Combustible dust clouds may be created where operations produce dust. Product fines and trimmings pose a serious risk of combustible dust explosion or fire. Product fines are VERY sensitive to ignition. Minimize dust generation and accumulation, especially on horizontal surfaces and duct work. Handling and processing of product fines and trimmings should be conducted in accordance with NFPA-654 or similar best practices.
Incompatible materials	Oxidizing materials, Strong alkalis, Strong acids, Peroxides, Moisture, Isocyanates, Air, Polyols
Hazardous decomposition products	formation of monomeric cyclopentadiene, Hydrogen Chloride, Carbon monoxide, Carbon dioxide

SECTION 11: Toxicological information

Description toxicological (health) effects and the available data used to identify those effects:

Routes of Entry: Inhalation; Ingestion; Skin contact; Skin absorption; Eye contact

Symptoms related to the physical, chemical, and toxicological characteristics:

Causes serious eye irritation. Causes skin irritation. Substance can be absorbed through the skin. Harmful if swallowed. Ingestion may cause irritation of throat, stomach and gastrointestinal tract. Prolonged or repeated exposure may cause liver and kidney damage. H361 - Suspected of damaging fertility or the unborn child.

Delayed and immediate effects and chronic effects from short- and long-term exposure:

	Numerical Values of Toxicity		
Acute Toxicity Estimates:	**Oral LD_{50} (rat)**	**Dermal LD_{50} (rabbit)**	**Inhalation LC_{50} (rat)**
Dicylopentadiene (CP Dimer)	590 mg/kg	> 2,000 mg/kg	1.972 mg/l/4H
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	>2,930 mg/kg	>2,000 mg/kg	> 4mg/l (4h)

Calculated ATE(mixture):	ATE(Mix) Acute Inhalation Vapor = 2.063 mg/l/4H - 2.139 mg/l/4H
Skin Corrosion/Irritation:	Toxicological data of complete product not available. Based on the available information from literature references, the classification criteria are fulfilled. Irritant. Calculation method.
Serious Eye Damage/Irritation:	Draize test, rabbit, eye: 500 mg/24H Mild
Respiratory or Skin Sensitization:	Not a skin sensitizer (guinea-pig maximization test)
Reproductive Toxicity:	Based on the available information from supplier(s), the classification criteria are fulfilled. Suspected of damaging fertility or the unborn child. Calculation method.
Germ Cell Mutagenicity:	Not known or reported to be mutagenic.
STOT – single exposure:	Toxicological data of complete product not available. Based on the available information from literature references, the classification criteria are fulfilled. Causes respiratory irritation. Calculation method.
STOT – repeated exposure:	Does not meet classification criteria.

	Carcinogenicity Listings by IARC and NTP	
	IARC	NTP
Dicylopentadiene (CP Dimer)	Not Listed	Not Listed
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	Group 3	Not Listed

SECTION 12: Ecological information

	Numerical Values of Toxicity		
	Aquatic EC_{50} (48H)	Aquatic EC_{50} (96H)	Aquatic LC_{50} (96H)
Dicylopentadiene (CP Dimer)	0.62 mg/l (D. magna)	100 mg/l (P. subcapitata)	9.765 - 31.1 mg/L (Pisces)
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	0.48 mg/L (D. magna)	0.758 mg/l (algae)	1.1 mg/l (O. latipes)

Persistence and Degradability: Not Determined

Bioaccumulative Potential: Not Determined

Mobility in Soil: Not readily biodegradable log Koc (5-vinyl-norbornene) = 2.5 (OECD 121). Conclusion: Adsorption to soil is possible

SECTION 13: Disposal considerations

Waste treatment methods

The waste may be a characteristic hazardous waste. The waste may be ignitable. Perform a waste determination prior to disposal. Dispose of hazardous waste at RCRA permitted facilities. All other wastes should be disposed at permitted facilities that accept industrial waste. Follow all SDS/label precautions even after container is emptied because it may retain product residues. RIM polymer dust is liable to self-ignite or spontaneously combust at temperature above 55 °C. Storage temperatures, including transport and disposal, must remain below 55 °C. Dispose of process fines and trimmings submerged in water, oil, or polyethylene glycol to prevent exposure to air. See Telene® Process Book version VB - AP - 2017/12 and Telene® Process Safety Document reference VC (VC - NN/PV - 2021/07).

SECTION 14: Transport information

U.S. Department of Transportation UN Number: UN2048

Proper Shipping Name: Dicyclopentadiene Mixture

Transport Hazard Class(es): Class 3 Packing Group: III

Canadian Transport of Dangerous Goods (TDG): UN2048

Proper Shipping Name: Dicyclopentadiene Mixture
Transport Hazard Class(es): Class 3
Packing Group: III

Mexican Regulation for the Land Transport of Hazardous Materials and Wastes: UN2048

Proper Shipping Name: Dicyclopentadiene Mixture
Transport Hazard Class(es): Class 3
Packing Group: III

International Air Transport Authority (IATA/ICAO) UN Number: UN2048

Proper Shipping Name: Dicyclopentadiene Mixture
Transport Hazard Class(es): Class 3 Packing Group: III

International Maritime Organization (IMO) UN Number: UN2048

Proper Shipping Name: Dicyclopentadiene Mixture
Transport Hazard Class(es): Class 3 Packing Group: III
Marine Pollutant: Yes

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Inventory Status:	
Australia (AIIC):	All components of this product are included on this Inventory/List, or are otherwise exempt.
Canada (DSL):	All components of this product are included on this Inventory/List, or are otherwise exempt.
China (IECSC):	All components of this product are included on this Inventory/List, or are otherwise exempt.
Japan (ENCS):	Some but not all components are listed on this inventory. Please contact productstewardship@zeonchemicals.com for more information.
Korea (KECL):	Some but not all components are listed on this inventory. Please contact productstewardship@zeonchemicals.com for more information.
New Zealand (NZIoC):	Some but not all components are listed on this inventory. Please contact productstewardship@zeonchemicals.com for more information.
Philippines (PICCS):	Some but not all components are listed on this inventory. Please contact productstewardship@zeonchemicals.com for more information.
Taiwan (TCSI):	All components of this product are included on this Inventory/List, or are otherwise exempt.
Thailand (TECI)	Some but not all components are listed on this inventory. Please contact productstewardship@zeonchemicals.com for more information.
United States (TSCA):	All components of this product are included on the TSCA Inventory, with a commercial designation of Active, or are otherwise exempt.
Vietnam (VNECI):	All components of this product are included on this Inventory/List, or are otherwise exempt.

United States Regulatory Status

TSCA (Toxic Substance Control Act)

This product contains the following chemical(s) subject to None

TSCA 12(b) export notification:

TSCA Significant New Use Rules (SNUR): None

EPCRA (Emergency Planning and Community Right to Know Act)

Section 311/312 (SARA Title III) Hazard Categories: Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3; Reproductive Toxicity Category 2; Serious Eye Damage/Eye Irritation Category 2A; Skin Corrosion/Irritation Category 2; Acute Toxicity - Oral Category 4; Acute Toxicity - Inhalation Vapour Category 3; Flammable Liquid Category 3

Section 313 (SARA Title III) Toxic Chemical Release Inventory Reporting:

This product contains the following EPCRA Section 313 chemical(s) exceeding the *de minimis* amount subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372):

Chemical Name	CAS Number	Percent by Weight
Dicyclopentadiene	77-73-6	80 - 100

State Legislation

California Proposition 65: **WARNING:** This product can expose you to Carbon black, 1,3-Butadiene, Styrene, which is(are) known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov. This product can expose you to Methanol, 1, 3 Butadiene, which is(are) known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

National Fire Protection Association:

Health Hazard:	3
Fire Hazard:	2
Instability Hazard:	1
Special Hazard:	None

Hazardous Materials Identification System:

Health:	3 *
Flammability:	2
Physical Hazard:	1
PPE Code	To be determined by workplace conditions.

Abbreviations:

ANSI: American National Standards Institute
APS: Average Particle Size in microns
BCF: Bioconcentration Factor
CFR: Code of Federal Regulations
EC_{50}: Effective Concentration, 50%
GHS: Globally Harmonized System for Classification and Labeling of Chemicals
HCS: Hazard Communication Standard
IARC: International Agency for Research on Cancer
ICAO: International Civil Aviation Organization
LC_{50}: Lethal Concentration, 50%
LD_{50}: Lethal Dose, 50%
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
SARA Superfund Amendment and Reauthorization Act
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicant
U.S.: United States

Prepared by: This SDS was prepared by Zeon Specialty Materials Inc..

Issue Date: 06-23-2026

Revision Summary: This document supersedes SDS dated: 07-17-2022

User's Responsibility: This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation must be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin must be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

Disclaimer of Liability: As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user.

END of SDS

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PROCESS SAFETY AND SAFE HANDLING AND DISPOSAL OF PROCESS FINES

This document describes potentially hazardous process related situations that have been noted by TELENE® or TELENE® molders

The following situations are described below:

1. Dust handling
2. Vapor ignition prevention during molding operation
3. Waste material and RIM unit purge handling

1. Dust Handling:

Secondary operations on Telene® RIM Polymer Resin parts including sanding, trimming, machining, milling, drilling or sawing may produce hot shavings, granules, and/or very fine particle size dust (powder). Telene® RIM Polymer powder may form explosive dust mixtures with air.

Accumulation of these materials in a pile or in a confined container such as a box, drum, vacuum dust collector or dumpster may cause rapid decomposition or, in extreme cases self-ignition. Shavings, granules, and/or powder must be cooled or treated before final collection for disposal.

This powder is also very sensitive to ignition by electrostatic discharge and is itself a static charge generator. Therefore, all dust-handling equipment including containers, conveyors, central vacuum systems, dust control devices, and other transfer equipment should follow the regulations in force for handling fine organic powder.

Dust Handling and Process Environment Recommendations:

-- Surface wall temperatures of all long-term (more than a few hours) storage, transfer, transportation containers and processing equipment involving dust must be controlled to a maximum of 55°C.

-- Prevent accumulation of dust in the workplace (e.g., good housekeeping and dust minimization.).

-- Eliminate ignition sources such as sparks or static buildup (e.g. equipment grounding, explosive rated switches and boxes, work area humidification, etc.).

-- All process areas and equipment must be protected from dust explosions by employing a properly engineered explosion suppression system.

Procedure to Prevent Self-Ignition of Process Fines and Scrap:

-- Add sufficient Polyethylene Glycol 400 (PEG 400) to fill a drum 40 - 50% full.

-- Simultaneously agitate mixture while adding powder until the drum is full and cannot be stirred. The consistency of the product formed will be paste-like.

-- If at the end of the production day insufficient powder has been collected to form a paste, cover the drum and continue the process the next day.

-- When the drum is nearly full, the product formed can be disposed. Processors may transferring paste material into a polyethylene bag. Squeeze excess air from the bag and seal tightly before disposal.

2. Vapor Ignition Prevention During Molding Operation:

Some level of DCPD vapor will always exist in a mold because the high exothermic temperature of the part will vaporize some amount of DCPD and it will condense on the cool mold core. This residual vapor can be a fire-hazard in specific conditions. Telene® 1700 series are most vulnerable to fugitive vapor emissions; but the principles of preventing vapor ignition are valid for all Telene® formulations. The flash ignition results when a static charge ignites DCPD vapor in the mold cavity. It can be created when the mold opens or when the molded part is removed from the tool.

For instance, misalignment of tool components can cause hot metal particles to fall onto a freshly polymerized surface of the part while opening the tool, causing a fire. These ignitions are typically self-extinguishing but can be self-sustaining in the case of large amounts of DCPD vapor (deep cavity, vertical parting line, high contamination of the formulation, and poor processing conditions resulting in excess vapor at demold). Operators should be aware of the potential for flash ignition and should be properly instructed on how to extinguish a fire.

As with any potential combustion situation, eliminating one of three factors can eliminate the fire potential. Those factors are ignition source (here static spark), DCPD vapors and oxygen concentration in the air.

Eliminate Ignition Source:

It is difficult to remove all static sparks in a controlled and reproducible manner. However, some measures will help reduce the static charge that occurs in the molding process.

-- Grounding: Make sure that both mold halves are properly grounded. Do not rely on the contact with the press plates, specifically if tool includes insulation plates.

-- Reduce static build-up: Avoid situations where parts stick to both cavity and core. There is a higher potential for static charge generation. Surface breaks and sink marks are a sign of core sticking.

-- Eliminate operator static charge: As an example, use antistatic safety shoes (certification ESD 61340-5-1 or equivalent/ESD)

-- Control moisture content in the air: Low moisture content will favor generation of static build up.

Eliminate/Minimize DCPD Vapors:

-- Minimize DCPD vapors in the mold: Contamination levels of more sensitive formulations, like Telene® 1700 series should be carefully monitored. Molding conditions which minimize the potential vapor inside the mold upon opening and checking molding parameters/contamination levels as soon as excessive vapor level appears are required. In case of extreme mold geometry (very large and deep cavity volume, or poor mold temperature conditions), nitrogen purge is recommended to increase DCPD conversion and reduce vapor emission.

-- Keep vapor concentration as low as possible by using local mold exhaust system.

-- Keep the molding area free of combustible materials like flash, mold drippings, machine oils, and rags.

Reduce oxygen concentration in the air

-- Reduce oxygen to burn the DCPD vapors by purging the mold during demolding.

Despite all precautions, if a fire occurs during the first millimeters of mold opening, the mold should be immediately closed, and fire self-extinguished. If some burning of the part flash continues, a fire extinguisher should be used to extinguish the fire. Keep fire extinguishers ready near demolding operations and train workers on their use. If the flash ignition occurs during parts removal, the operator should drop the part onto the floor and extinguish the fire using a fire extinguisher

3. Waste Material and RIM Unit Purge Handling

Telene® formulation waste generated during regular RIM machine operations, including purging, is typically limited, mainly coming from daily filter cleaning or drum changes. However, in the case of specific maintenance operations larger formulation waste can be created. The waste should be kept separately for each of formulation's components in drums open to air, that would deactivate the co-catalyst over time.

Waste of A and B formulation components should be disposed separately at a specialized waste treatment company and not mixed together. Mixing waste of A and B formulation components in an open bucket or a drum may lead to an uncontrolled reaction. This reaction usually releases high heat and heavy white smoke, creating a potentially dangerous situation.

User's Responsibility

This technical bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if additional precautions may be necessary. Your Telene® representative may be of assistance in implementing any of these procedures.

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