



Zeon Chemicals L. P.

Material Safety Data Sheet

Form: 413
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MSDS Number: Z02902

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Manufacturer / Importer:
Zeon Chemicals L.P.
4111 Bells Lane
Louisville, Kentucky 40211

Telephone Number:
1-800-735-3388
(502)-775-2000

Emergency Telephone Number:
1-800-776-2460 Ext 7650
Compounding

Chemical Family:
Acrylate / Polyamide
Thermoplastic Vulcanizate (TPV)

Uses:
Molded and Extruded Goods

(502) 774-8126

This MSDS applies to the following product(s):

Zeotherm® 100-70B

Zeotherm® 100-80B

Zeotherm® 100-90B

Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS #	Amount	Exposure Limits	
			OSHA PEL	ACGIH TLV
Carbon Black within TPV Matrix	1333-86-4	<2 %	3 mg/m ³ TWA	3.5 mg/m ³ TWA, A4
Talc (no asbestos fibers & <1% quartz) within TPV Matrix	14807-96-6	<2 %	2 mg/m ³ TWA RD	2 mg/m ³ TWA RD

Other Ingredients	CAS #	Amount	Notes
Cured Acrylate Elastomer / Polyamide Blend	Proprietary Mixture	100 %	TWA = Time Weighted Average TLV = Threshold Limit Value AL = Action Level RD = Respirable Dust TD = Total Dust STEL = Short Term Exposure Limit Skin = Skin contact may be a significant route of exposure A2 = ACGIH Suspected Human Carcinogen A3 = ACGIH Animal Carcinogen A4 = ACGIH Not Classifiable as a Human Carcinogen * = Particulates Not Otherwise Classified

Section 3 - HAZARDS IDENTIFICATION

Emergency Overview:	This product is a black pellet with a mild characteristic cured elastomer odor. Processing operations may produce vapors or dust that may be harmful if inhaled and cause eye, skin, and respiratory tract irritation. Toxic combustion products may be released under fire conditions. A static charge may be generated during unloading and transport. The static charge may cause a flash fire in the presence of volatile or flammable materials.
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Potential Health Effects From Overexposure: Possible routes of entry include skin & eye contact and process vapor, mist, or dust inhalation.

No adverse health effects are expected during normal processing when potential exposures are eliminated by good industrial hygiene practice and well ventilated conditions. Contact with molten thermoplastic vulcanizate may cause thermal burns. Care should be taken for compounding operations that may generate dust. Exposure to dust may cause skin and eye irritation in the same manner as a nuisance dust. Dust can cause shortness of breath, chronic cough, or upper respiratory tract irritation. At processing temperatures, the thermoplastic vulcanizate may emit fumes and vapors that may be harmful if inhaled, may be absorbed through skin, and may cause irritation of the eyes, skin, nose, throat, and respiratory tract. Processing under conditions of inadequate ventilation may produce symptoms of nausea, dizziness, or headaches. The potential for irritation or CNS effects will depend on the effectiveness of exhaust ventilation provided to the process area.

This product contains a small amount of carbon black within the cured TPV matrix. Exposure to carbon black is expected to be limited since it is incorporated in the product. Carbon black is reported to cause cancer based on laboratory studies with rats. Carbon black is listed by IARC as a 2(B) carcinogen - possibly carcinogenic to humans and by ACGIH as an A4 carcinogen - not classifiable as a human carcinogen.

This product contains talc which upon repeated or prolonged inhalation is reported to cause scarring of the lungs with shortness of breath, chronic cough, and heart effects. Exposure to talc is expected to be limited since it is incorporated in the TPV matrix.

Limited studies have shown that this product may have the potential to release trace quantities of aniline (CASRN 62-53-3) during processing operations. Processing under conditions of inadequate ventilation may produce symptoms of nausea, dizziness, headaches, shortness of breath, and cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Overexposure to process vapors containing aniline may cause blood abnormalities and liver injury. Aniline has an established OSHA PEL of 5 ppm and an ACGIH TLV of 2 ppm. Aniline is listed by the International Agency for Research on Cancer (IARC) as a Group 3 carcinogen (not classifiable as a human carcinogen) and by ACGIH as a confirmed animal carcinogen.

Appropriate precautions should be taken to minimize potential exposure to accidental ingestion, inhalation of process vapors, mists, or dusts, and skin contact.

Overexposure to decomposition or combustion products may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures taken to avoid exposure. See Section 10 for information on combustion products.

Section 4 - FIRST AID MEASURES

If irritation occurs or persists from any route of exposure, remove the affected individual from the area and seek medical assistance.

Eye Contact: Treat as any foreign particulate matter. Flush eyes with running water for several minutes while holding eyelids open. Consult a physician if irritation persists.

Skin Contact: Remove contaminated clothing. Wash contact area with soap and water for 15 minutes. Seek medical attention if irritation / allergic skin reaction develops. If molten resin contacts skin, cool rapidly with water. Do not attempt to remove resin from skin. Seek medical attention for thermal burn.

Particulate Inhalation: Remove affected individual to fresh air.

Vapor Inhalation (processing vapors or decomposition products): Remove the affected individual to fresh air. If breathing has stopped, administer artificial respiration and seek medical assistance immediately.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media: Water, ABC dry chemical, or Protein type air foams are recommended media. Thermoplastic vulcanizates would be considered "ordinary combustibles" (NFPA defined Class A). Carbon dioxide is generally not recommended for use on Class A fires as a lack of cooling capacity may result in reignition.

Special Firefighting Procedures: Wear positive pressure self-contained breathing apparatus (SCBA) during the attack phase of firefighting operations and during cleanup in enclosed or poorly ventilated areas immediately after a fire. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source.

Unusual Fire and Explosion Hazards: A static charge may be generated during unloading and transport. The static charge may cause a flash fire in the presence of volatile or flammable materials. Toxic gases may be formed upon combustion and represents a hazard to firefighters. See Section 10 for additional information on combustion products.

Section 6 - ACCIDENTAL RELEASE MEASURES

If the material is released or spilled, sweep, shovel, or vacuum crumbs or chunks into closed containers for reuse or disposal.

Section 7 - HANDLING AND STORAGE

This product has a melting point of 220°C. Care should be taken during normal operation and during machine start-up and purging that the material not exceed 290°C.

This product may release smoke when processed under normal processing conditions. Larger quantities of smoke may be generated during machine cleanout or purge. Local exhaust ventilation should be provided to minimize employee exposure during normal processing and purging operations.

During start-up and purging of the processing equipment, purged material should be collected and either quenched in water or else placed in a closed, vented container until cool to minimize smoke generation. Purged material should not be allowed to accumulate uncovered or unquenched. Recommended processing conditions for this product should be followed at all times. Processing recommendations can be obtained at <http://www.zeotherm.com/processing>.

Thermoplastic vulcanizates may accumulate electrostatic charges during unloading and transport operations. Electrostatic charges may cause a flash fire in the presence of volatile or flammable materials. Eliminate ignition sources, including static buildup; provide adequate ventilation; bond, ground, and properly vent containers, conveyors, process control devices, and other transfer equipment. Ground all equipment and pour the product slowly into chute or vessel under inert gas when flammable materials are present.

During normal processing, thermoplastic vulcanizates will emit fumes and vapors when heated to processing temperatures. The concentration and composition of these vapors will depend on variables such as the specific formulation and processing method and temperature. Always process thermoplastic vulcanizates under well ventilated conditions and avoid continued or prolonged breathing of process vapors. Wash thoroughly after processing compound, especially before eating, smoking, or using toilet facilities. Do not use or consume food in processing areas. Do not use processing equipment to heat food.

Clean up following normal processing should be performed under well ventilated conditions. Thermoplastic vulcanizates may be held at process temperatures for a short time without significant thermal degradation. However exposure to either elevated temperature or excessive time will result in decomposition. Equipment should not be shut down for extended time periods with compound in it or decomposition may occur.

Processing fume condensates, which may include toxic contaminants, may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Protective clothing, including impervious gloves, should be worn during cleanup operations to prevent skin contact.

Store in a cool, dry place away from direct light to maintain quality.

Abnormal conditions such as equipment malfunction or using improper equipment or procedures, or hangup or stagnation of material during processing may cause decomposition. Employees involved in removing decomposing material should be provided suitable air-supplied respirators, such as an approved positive pressure self-contained breathing apparatus.

Post-processing operations at your workplace or at your customer's workplace involving heat sufficient to result in thermoplastic vulcanizates breakdown emitting smoke and fumes should always be conducted in such a manner to avoid inhalation of fumes. Local exhaust ventilation should be provided to prevent significant employee exposure.

Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Effective general and, if necessary, local exhaust ventilation is strongly recommended to draw fumes or vapors away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the limits listed in Section 2.

Respiratory Protection: For processing operations with inadequate ventilation or that generate dust and where airborne concentrations are expected to exceed the recommended exposure limits, wear a NIOSH approved respirator suitable for the anticipated airborne concentration. Wear a positive pressure air-supplied respirator in situations where there may be potential for elevated airborne exposure such as during equipment malfunction, or product hangup or stagnation during processing that may result in decomposition.

Protective Equipment: During processing operations, safety glasses and/or goggles suitable for keeping dust or particulate matter out of the eyes should be worn when eye contact is anticipated. Protective gloves should be worn to prevent skin contact.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity (H₂O=1): 1.1
Melting Point: 220°C

Solubility in Water: Insoluble

% Volatile by Weight: <1 (water vapor)

Appearance and Odor: Black pellet with a mild characteristic cured elastomer odor.

Section 10 - STABILITY AND REACTIVITY

Stability: Stable

Hazardous Polymerization: Will not occur

Conditions to Avoid: Overheating

Materials to Avoid: No specific information is available, however strong oxidizers or reducing agents which are generally not compatible with many organic compounds, are not compatible with thermoplastic vulcanizates.

Hazardous Decomposition Products: Fumes produced when heated to decomposition temperatures may contain carbon monoxide, carbon dioxide, oxides of nitrogen, and trace quantities of fatty acids and esters, alcohols, caprolactam, aniline, and aliphatic and aromatic hydrocarbons. Combustion products must be considered toxic.

Section 11 - TOXICOLOGICAL INFORMATION

No information available.

Section 12 - ECOLOGICAL INFORMATION

No information available.

Section 13 - DISPOSAL CONSIDERATIONS

Waste resulting from this product as supplied is not known to be classified as a hazardous waste per the current listings and characteristics contained in 40 CFR Part 261, and its Appendices. Resin pellets are classified as "significant materials" under EPA's Storm Water Discharge Regulations. Do not allow resin pellets to enter storm water runoff or other waterways. It is the generator's responsibility to determine, per the regulation, the applicability of the Resource Conservation and Recovery Act (RCRA), as well as all state, local, or other governmental agency waste disposal regulations, to the particular waste materials prior to treatment or disposal.

Section 14 - TRANSPORTATION INFORMATION

For domestic transportation purposes, this product is not defined or designated as a hazardous material by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations.

DOT Hazard Class	Not Regulated	UN/NA Hazard No.	Not Applicable
DOT Proper Shipping Name	Not Applicable	Reportable Quantity	Not Applicable
DOT Label	Not Applicable		

Section 15 - REGULATORY INFORMATION

TSCA Inventory Status: This product and all components are listed on the U.S. EPA Toxic Substances Control Act Inventory or meet exemption criteria.

TSCA 12(b) Export Notification Status: This product does not contain any components subject to export notification requirements.

SARA 313 Status: This product does not contain any components exceeding the *de minimis* amount subject to reporting under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372.

Additional Right-to-Know Information on Components:

Component	CAS #	Key (See below)	
Carbon Black in TPV Matrix	1333-86-4	5, 9, 10, 14	*
Talc in TPV Matrix	14807-96-6	5, 9, 10	*
Cured Acrylate Elastomer / Polyamide Blend	Proprietary Mixture	7, 13	*

Key	Description	Key	Description
1.	Reserved	8.	MA Extraordinary Hazardous Substance above 1 ppm
2.	CA Listed Carcinogen	9.	MA Toxic or Hazardous Substance above 1%
3.	CA Listed Reproductive Toxin	10.	NJ Hazardous Substance above 1%
4.	PA Special Hazardous Substance above 0.01%	11.	NJ Special Health Hazard Substance above 0.1%
5.	PA Hazardous Substance above 1%	12.	NJ Environmental Hazardous Substance above 1%
6.	PA Non-Hazardous Substance above 3%	13.	NJ Non-Hazardous Substance above 1%
7.	PA Non-Hazardous Substance above 5%	14.	Canadian WHMIS Ingredient Disclosure List Substance

Hazard Rating System Classifications:

	NFPA	HMIS	Key: 0=least; 1=slight; 2=moderate; 3=high; 4=extreme
Health	2	1	National Fire Protection Association rating identifies hazards during a fire emergency.
Flammability	1	1	Hazardous Materials Identification System rating applies to products as packaged.
Reactivity	0	0	

It may be possible under certain processing and handling conditions, e.g. processes that create vapors, mists, or dust, to release unreacted monomers and other substances in airborne concentrations in excess of their established exposure limits or guidelines. Customers and processors should do sufficient in-house industrial hygiene monitoring to assure compliance of their operations.

Reason for (Re)issue: Revise Section 10

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.

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