ZEON CHEMICALS

MATERIAL SAFETY DATA SHEET

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SECTION 1 - CHEMICAL 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

CHEMICAL FAMILY:
Acrylonitrile / Butadiene Polymer Blend with Polyvinyl Chloride

EMERGENCY TELEPHONE NUMBER:
1-800-776-2460 Ext 7650
(502) 774-8126

USES:
Polymer/Adhesive Compounding

This MSDS applies to the following product(s):

Nysyn® DN 171

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS #	AMOUNT	EXPOSURE LIMITS	
			OSHA PEL	ACGIH TLV
Acrylonitrile	107-13-1	<10 ppm	2 ppm TWA 1 ppm AL 10 ppm Ceiling	2 ppm TWA A2, Skin
Butadiene	106-99-0	<0.2 ppm	1 ppm TWA 5 ppm STEL 0.5 ppm AL	2 ppm TWA A2
Vinyl Chloride	75-01-4	<9 ppm	1 ppm TWA 5 ppm Ceiling 0.5 ppm AL	5 ppm TWA A1
p-t-butyl phenol	98-54-4	<0.1 %	None Established	None Established
4-Vinyl Cyclohexene	100-40-3	<0.1 % est	None Established	0.1 ppm TWA, A3

OTHER INGREDIENTS	CAS #	AMOUNT	NOTES
Acrylonitrile / Butadiene Polymer	9003-18-3	>60 %	TWA = Time Weighted Average TLV = Threshold Limit Value AL = Action Level RD = Respirable Dust TD = Total DustSTEL = Short Term Exposure Limit Skin = Skin contact may be a significant route of exposure A1 = Confirmed Human CarcinogenA2 = ACGIH Suspected Human Carcinogen A3 = ACGIH Animal Carcinogen A4 = ACGIH Not Classifiable as a Human Carcinogen PNOC = Particulates Not Otherwise Classified
Polyvinyl Chloride	9002-86-2	>25 %	
Non Hazardous Plasticizer	8013-07-8	<3 %	

EMERGENCY OVERVIEW

This product is a tan to amber slab with a mild characteristic odor. Processing operations may produce vapors, mists, or dust that may cause eye, skin, and respiratory tract irritation. Toxic combustion products may be released under fire conditions.

SECTION 3 - HAZARDS IDENTIFICATION

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. At processing temperatures, the combined ingredients (elastomer and other processing ingredients) may emit fumes and vapors that may cause irritation to the eyes, skin, nose, throat, and respiratory tract. Processing under conditions of inadequate ventilation may produce symptoms of nausea, dizziness, or headaches. Typically these effects are reversible upon removal from exposure and no lasting effects are expected. Most importantly, the potential for irritation will depend on the effectiveness of exhaust ventilation provided to the process area.

This product may contain a trace amount of p-t-butyl phenol as a component of the antioxidant package. Although rare, there are reports of depigmentation of the skin (vitiligo) associated with this compound in related elastomer products. We recommend that contact with exposed skin be avoided by the use of gloves and other personal protective equipment appropriate for handling and / or processing operations.

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.

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. Elastomers 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: Special precautions must be taken if elastomers are ground or otherwise formed into a fine powder or dust since many organic substances in these forms present a dust explosion hazard. 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

During normal processing, virtually all elastomers 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 elastomers 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. Elastomer 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.

Compounding ingredients added to elastomer products may require special handling. It is the users responsibility to follow the recommended precautions of the individual additive suppliers.

Post-processing operations at your workplace or at your customer's workplace involving heat sufficient to result in polymer 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 must always be provided 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: NIOSH approved respiratory protection may be needed if vapors, mists, or dust are generated during handling or processing. 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 (H_2O=1): ~1.0 Solubility in Water: Insoluble % Volatile by Weight: <1 (water vapor)

Appearance and Odor: Tan to amber colored slab with a mild characteristic 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 elastomers.

Hazardous Decomposition Products: Fumes produced when heated to decomposition temperatures may contain carbon monoxide, carbon dioxide, hydrogen cyanide, oxides of nitrogen, hydrochloric acid, and small amounts of aromatic and aliphatic hydrocarbons. Combustion products from rubber, like those of other natural and synthetic materials, 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. 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 - TRANSPORT INFORMATION

For domestic transportation purposes, these products are 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.

TSCA 12(b) Export Notification Status: This product may contain trace levels of 4-Vinyl Cyclohexene (CAS 100-40-3),

an impurity in butadiene monomer. which is 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.

SECTION 15 - REGULATORY INFORMATION CONTINUED

Additional Right-to-Know Information on Components:

Component	CAS #	Key (See below)	
Acrylonitrile	107-13-1	2, 8	
Butadiene	106-99-0	2, 8	
Vinyl Chloride	75-01-4	2	
4-Vinyl Cyclohexene	100-40-3	2	
Polyvinyl Chloride	9002-86-2	7, 13	*
Acrylonitrile / Butadiene Polymer	9003-18-3	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

SECTION 16 - OTHER INFORMATION

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	

Appendix A - Acrylonitrile

This product contains trace amounts of acrylonitrile. Acrylonitrile is regulated by OSHA at 29 CFR 1910.1045. Acrylonitrile is listed by OSHA as a carcinogen, by the International Agency for Research on Cancer (IARC) as a Group 2B carcinogen (possibly carcinogenic to humans), by NTP as an anticipated human carcinogen, and by ACGIH as a suspected human carcinogen. Air sampling studies conducted on related acrylonitrile / butadiene polymers under simulated compound processing conditions showed airborne concentrations of acrylonitrile to be below one (1) ppm. Users should not rely on manufacturer's data alone, but should do sufficient in-plant testing for acrylonitrile levels to assure compliance of their operations.

Appendix B - Butadiene

This product contains trace amounts of butadiene. Butadiene is regulated by OSHA at 29 CFR 1910.1051. Butadiene is listed by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans), by NTP as a known human carcinogen, and by ACGIH as a suspected human carcinogen.

Appendix C - Vinyl Chloride

This product contains a trace amount of vinyl chloride monomer (VCM). The OSHA Standard on vinyl chloride, 29 CFR 1910.1017, requires all facilities where PVC (including blends of PVC with other polymers) is processed be monitored to determine concentrations of vinyl chloride monomer in the workplace air. Exposures cannot exceed 1 ppm on an 8 hour Time Weighted Average (TWA) or 5 ppm in any 15 minute time period. If the Action Level (0.5 ppm TWA) is exceeded, the workplace employer is required to comply with certain parts of the OSHA Standard. Residual VCM in the product covered by this MSDS is below 25 ppm. With current industrial hygiene practices, including adequate ventilation, it is possible to use this product without exceeding any of the current exposure limits. Compliance with the Vinyl Chloride Standard requires the workplace employer to implement a program of initial monitoring to establish whether the Action Level is exceeded. VCM is listed by OSHA as a carcinogen, by the International Agency for Research on Cancer (IARC) as a Group 1 carcinogen (sufficient evidence of carcinogenicity in humans), by NTP as a human carcinogen, and by ACGIH as a confirmed human carcinogen.

Appendix D - 4-Vinyl Cyclohexene

This product may contain trace amounts of 4-Vinyl Cyclohexene. 4-VCH is listed by the International Agency for Research on Cancer (IARC) as a Group 2B carcinogen (possibly carcinogenic to humans) and by ACGIH as an animal carcinogen.

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: New

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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