BFGoodrich

AN-5711

The BFGoodrich Company
Geon Vinyl Division
6100 Oak Tree Boulevard
Cleveland, Ohio 44131
216-447-6000

April 28, 1992

Eric Whitewood
Dynamic Closures
1304 Oakville Drive
Copperascove, TX 76522

Dear Eric:

Attached is a copy of USDA's acceptance of our Geon 8700A Black 288 for use in slaughtering, processing, transporting, or storage areas in incidental contact with meat or poultry food product prepared under Federal inspection for your records.

Sincerely,

THE BFGOODRICH COMPANY

Connie N. Dillon

Connie N. Dillon
Regulatory and Data
System Specialist

0428-1/jp

Attachment

21552001

United States Department of Agriculture

Food Safety and Inspection Service

Regulatory Programs
Building 306, BARC-East
Beltsville, MD 20705

April 20, 1992

Ms. Connie N. Dillon
The BF Goodrich Company
6100 Oak Tree Boulevard
Cleveland, OH 44131

Dear Ms. Dillon:

Thank you for your March 30 letter about a resin.

Your Geon 8700A Black 288 is chemically acceptable for use in slaughtering, processing, transporting, or storage areas in incidental contact with meat or poultry food product prepared under Federal inspection.

This acceptance is valid so long as the composition and use of the substance remain as described to us. This letter does not constitute acceptance for materials made wholly or partly from substances accepted herein. No endorsement of the substance or of any concomitant claims is intended. It is the responsibility of the user and/or supplier to determine any regulatory limitations which may apply to their use of this substance.

Sincerely,

John M. Damaré

John M. Damaré, Chief
Compounds and Packaging Branch
Product Assessment Division

21552002

United States Department of Agriculture

Food Safety and Inspection Service

Regulatory Programs
Building 306, BARC-East
Beltsville, MD 20705

April 20, 1992

Ms. Connie N. Dillon
The BF Goodrich Company
6100 Oak Tree Boulevard
Cleveland, OH 44131

Dear Ms. Dillon:

Thank you for your March 30 letter about a resin.

Your Geon 8700A Black 288 is chemically acceptable for use in slaughtering, processing, transporting, or storage areas in incidental contact with meat or poultry food product prepared under Federal inspection.

This acceptance is valid so long as the composition and use of the substance remain as described to us. This letter does not constitute acceptance for materials made wholly or partly from substances accepted herein. No endorsement of the substance or of any concomitant claims is intended. It is the responsibility of the user and/or supplier to determine any regulatory limitations which may apply to their use of this substance.

Sincerely,

John M. Damaré

John M. Damaré, Chief
Compounds and Packaging Branch
Product Assessment Division

cc: Eric Whitwood
Dyronne Clowers

21552003

BFGoodrich

Sent Express Mail 3/30/92

The BFGoodrich Company
Geon Vinyl Division
6100 Oak Tree Boulevard
Cleveland, Ohio 44131
216-447-6000

March 30, 1992

Mark J. Reo, Chemist
Compounds and Packaging Branch
Product Assessment Division
USDA
Bldg. 306, BARC-East
Beltsville, MD 20705

Dear Mark:

In response to your correspondence dated March 6, 1992, I am providing you with the attached additional information you requested on our Geon compound 8700A Black 288 submission, dated September 18, 1991.

I trust this additional data will allow you to complete the evaluation on our compound.

If I can be of further assistance, please contact me at 216/447-7831.

Sincerely,

THE BFGOODRICH COMPANY

Connie N. Dillon

Connie N. Dillon
Regulatory and Data System Specialist

0330-1/jp

Attachment

BFGOODRICH COMPANY
CONFIDENTIAL COMPOSITION OF 8700A BLACK 288

Goodrite 2301:	
Styrene Acrylonitrile Copolymer (CAS. No. 9003-54-7)	175.105/177.1200/175.300/ 177.1210/175.320/181.32/176.180
*Tin Mercaptide:	
Dibutyl Tin diLauryl Mercaptide	-
Super-PFlex 200:	
Calcium Carbonate, Stearic Coated (CAS. No. 1317-65-3)	175.300/177.1650/175.390/ 177.2260/176.170/177.2600/ 177.1210/177.2800/177.1350/ 178.3297/177.1460/181.30
ɔon 103E PF-76 Resin:	
PVC Resin (CAS. No. 9002-86-2)	Prior Sanction
Monarch 880:	
Carbon Black, Furnace (CAS. No. 1333-86-4)	177.2600 (10% limit)

* I spoke to Witco (Dr. Bernie Bluestein) on 3/20/92 and requested (2nd request) they submit as soon as possible the proprietory formulation on the Tin Mercaptide, which they agreed to do.

United States Department of Agriculture

Food Safety and Inspection Service

Regulatory Programs
Building 306, BARC-East
Beltsville, MD 20705

MAR 11 1992

March 6, 1992

Dr. Robert K. Hinderer
The BF Goodrich Company
3925 Embassy Parkway
Akron, OH 44313-1799

Dear Dr. Hinderer:

Your September 18, 1991 letter to Mr. Anderson has been forwarded to this office for chemical evaluation.

We are unable to complete our evaluation of your 8700 A Black 288 until we receive more information from you or your suppliers on the following ingredients:

710699 Goodrite 2301
Tin Mercaptide
Super-PFlex 200
103EPF76 Resin
Monarch 880

Dyes and pigments should always be identified by their 5-digit Colour Index Constitution Number or structural formula. All other major and minor constituents must be listed by proper chemical name. If this information is unavailable to you, your supplier may send it directly to us. Chemical formulations and other proprietary information are held in a confidential file and used only to evaluate the material.

When we receive this information, we will gladly complete the evaluation of your material for use in federally inspected meat or poultry establishments.

Sincerely,

Mark J. Reo, Chemist
Compounds and Packaging Branch
Product Assessment Division

301/504-1500

21552006

FSIS FORM 11,300-14 (12/91)

Witco

FAX TRANSMISSION FORM

ARGUS DIVISION, WITCO CORPORATION
8 Wright Way, Oakland, New Jersey 07438
Phone: 201-337-2038 FAX No. 201-337-3753

Date: March 30, 1992

To: Miss Connie Dillon
Company: B. F. Goodrich

FAX No.: 216-447-6458 **No. of Pages:** 2

From: B.R. Bluestein

Subject: MARK A - Supporting Letter to USDA

Dear Miss Dillon:

As you requested, I forwarded a letter to Mr. Mark Reo of the United States Department of Agriculture with information about MARK A.

This letter was sent March 28th by U.S. Post Office express mail to arrive this morning, March 30th. Attached is a copy of my cover letter to Mark Reo.

If further information is needed, please let me know.

Sincerely yours,
Bern Bluestein

B.R. Bluestein, Ph.D.
Vice President, Tech.

21552007

Witco

Argus Division
Witco Corporation, 8 Wright Way, Oakland, New Jersey 07436 Telephone: 201-337-2036 Fax: 201-337-3753

March 28. 1992

Mr. Mark J. Reo, Chemist
Compounds and Packaging Section
Product Safety Assessment Division
Science
Building 306 BAHC-East
United States Department of Agriculture
Beltsville, MD 20705

Dear Mr. Reo:

Please refer to the pending application from B.F. Goodrich dated September 18, 1991.

At the request of Miss Connie Dillon of B.F. Goodrich we are sending you the attached confidential information on the Argus product MARK A. This information gives the complete formulation of MARK A. Also, a Material Safety Data Sheet on MARK A is included.

I am sure that you are exceptionally busy with all the ingredient assessments that you must do. However, we would certainly appreciate it, if you could complete your evaluation of this material as early as conveniently possible. Thank you.

Please let me know if you require any further information.

Sincerely yours,

Barn Bluestein

B.R. Bluestein, Ph.D.
Vice President, Tech.

~~Attachment~~

cc: Miss Connie Dillon, B.F. Goodrich Co.

21552008

BFGOODRICH
GEON VINYL DIVISION

Avon Lake Technical Center
P.O. Box 122
Moore & Walker Roads
Avon Lake, OH 44012

Recipe & Raw Material Control
C.V. Purks

DATE: March 18, 1992

TO: Connie Dillon

FAX NO.: X6459
FROM: Beverly Zallar
PHONE: (216) 933-1606
FAX NO.: (216) 933-1678

NOTES:

Connie,

Here is the MSDS sheet for BFG Code 710033.

Bev.

TOTAL NUMBER OF PAGES 6 INCLUDING THIS COVER LETTER.

21552009

HMIS Index:
0 - Minimal
1 - Slight
2 - Moderate
3 - Serious
4 - Severe

Cabot Corporation

Billerica Technical Center
157 Concord Road, Billerica, MA 01821

DEC 23 1991

HMIS Rating:
0 - Health
1 - Flammability
0 - Reactivity

710033
922

MATERIAL SAFETY DATA SHEET

Monarch 880

Code	C.A.S. No.	Date Revised	Issued by	Telephone Number
91-01	See Section II	November 1, 1991	D.C. Gray	(617) 342-6023

Section I – Material Identification and Use

Chemical Name	Chemical Family	Chemical Formula	Molecular Weight
Carbon Black	Carbon	C	12

Trade Name and Synonyms:

BLACK PEARLS®, ELFTEX®, MOGUL®, CSX, MONARCH®, REGAL®, STERLING®, VULCAN®, and CRX carbon blacks. The foregoing are registered trade names of Cabot Corporation.

Manufacturer Name	Street Address
Cabot Corporation	75 State Street
City	**State**
Boston	Massachusetts
Postal Zip Code	**Emergency Telephone Number**
02109-1806	(617)342-6023 (Days)/ (304)665-2442 (Nights/Weekend)

Section II – Ingredients

Ingredient	C.A.S. No.	Percent	OSHA PEL	ACGIH TLV
Carbon Black	1333-86-4	100	3.5 mg/m³	3.5 mg/m³

Section III – Physical Data

Boiling Point (°F)	Specific Gravity (H_2O = 1)	Vapor Pressure (mm Hg)	Vapor Density (Air = 1)
Not Applicable	1.7 – 1.9	Not Applicable	Not Applicable
Solubility in Water	**% Volatile by Volume**	**Appearance & Odor**	**Evaporation Rate**
Insoluble	Not Applicable	Amorphous black solid, no odor	Not Applicable

21552010

Section IV – Fire and Explosion Hazard Data

Flammability	Flash Point	Flammable Explosive Limits:	
Ignition in air above 600°F or 315°C.	Closed Cup >500°C Method:Pensky-Martens	Lower Expl. Limit Not Applicable	Upper Expl. Limit Not applicable

Special Fire Fighting Procedures
Normal fog or nozzle-jet application and/or exclusion of air

Extinguishing Media
Copious Water

Unusual Fire and Explosion Hazards
Carbon monoxide and carbon dioxide are products of combustion. Use appropriate respirator for protection against possible exposure to CO or CO_2. It may not be obvious that the carbon black is burning unless the material is stirred and sparks are apparent.

Explosion Data
The National Electrical Code (NEC) is derived from NFPA Standard 70, and is referenced in the OSHA regulations. Under the NEC, Chapter 5, Article 500-3, carbon black dusts are included under FPN No. 14, Group F dusts if they contain "more than 8% total volatile matter". Carbon black dusts containing less than 8% total volatile matter are not considered to present explosion hazards. CABOT carbon blacks are well below 8% total volatile matter.

Section V – Health Hazard Data

Effects of Exposure: Inhalation

Acute
None expected. Temporary discomfort to the upper respiratory tract may occur due to inhalation of dust concentrations above the Threshold Limit Value (TLV).

Chronic
Carbon black contains less than 0.1% of adsorbed polynuclear aromatic compounds (PNA). In non-adsorbed form, some PNA's have been found to be carcinogens in certain studies. No carcinogenic effect, however, has been found in humans due to exposure to carbon black. Carbon black is not considered a carcinogen by the International Agency for Research on Cancer (IARC), the Occuptional Safety and Health Administration (OSHA), or the National Toxicology Program (NTP). Epidemiologic studies of workers in the carbon black producing industry in the U.S. and W. Europe show no significant adverse health effects due to occupational exposure to carbon black.

Some studies in the USSR and E. Europe report respiratory diseases, including: bronchitis, pneumoconiosis, emphysema and rhinitis among some workers. Such studies are of questionable validity due to inadequate study design and methodology, lack of appropriate controls for cigarette smoking and other confounding factors, such as carbon monoxide, coal oil and petroleum vapors. Moreover, review of these studies indicates that the concentration of carbon black was substantially greater than OSHA recommended levels.

Section V (Continued)

Chronic inflammation, lung fibrosis, and lung tumors have been found in preliminary studies in rats experimentally exposed, for long periods of time, to excessive concentrations of carbon black and other insoluble dust particles which overwhelm the lung clearance mechanisms. The researchers who conducted these tests believe that these conditions most likely result from the massive accumulation of small dust particles in the lung, the "dust overload phenomenon", rather than from a specific chemical effect of the dust particles. Such effects occur only when the lungs are overloaded with an excess of small particles. They are unlikely to result from workplace exposures to carbon black at or below the TLV. Human studies have not found that workplace exposures to carbon black at or below the TLV cause these effects.

Effects of Exposure: Skin

Acute
None significant. See Section VIII-Hygienic Practices.

Chronic
None significant

Primary Route of Entry
Inhalation

First Aid Procedures
For inhalation discomfort, move victim to fresh air.

Medical Conditions Prone to Aggravation by Exposure
None expected. Carbon black, like any nuisance dust, may aggravate certain pre-existing upper respiratory disorders, such as bronchitis or asthma.

Section VI – Reactivity Data

Stability
Stable

Hazardous Polymerization
Not Applicable

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide and small amounts of sulfur containing gases when burning.

Conditions to Avoid
Excessive heat or flame. May react upon contact with strong oxidizers such as chlorates, bromates and nitrates.

Section VII –Spill or Leak Procedures

Steps to be Taken In Case Material is Released or Spilled
Carbon black is not a hazardous waste under U.S. Federal RCRA Regulation. Wear NIOSH approved Dust Protection Respirator, if needed. Spills should be removed by vacuuming, or spraying with water and sweeping mixture into a suitable container.

Waste Disposal Method
Burn or bury in accordance with Federal, State and local laws and regulations.

21552012

Section VIII – Safe Handling and Use Information

Respiratory Protection
None in normal handling. Wear NIOSH approved respirator for nuisance dust when dust levels exceed TLV.

Ventilation
Sufficient ventilation, in volume and pattern, to maintain exposure below TLV.

Protective Gloves	Eye Protection
None required.	None required.

Hygienic Practices
Wash exposed skin for hygienic purposes. Most skin irritation attributed to carbon black has been found to be due to the soap used for washup. A mild unscented soap should be used.

Section IX – Special Precautions

Precautions to be Taken In Handling and Storing
Before entering closed vessels and confined spaces, test for possible elevated levels of CO. Wear appropriate respirator to guard against possible exposure to CO, CO_2, or lack of adequate oxygen supply.

Section X – Regulatory Information

The trade name substances BLACK PEARLS®, ELFTEX®, MOGUL®, CSX, MONARCH®, REGAL®, STERLING®, VULCAN®, and CRX are names for CABOT carbon blacks, and are registered trade names of Cabot Corporation.

Carbon black, CAS No. 1333-86-4 appears on the TSCA inventory (U.S.), EINECS (Europe), AICS (Australia), CEPA (Canada), and MITI (Japan) as a chemical of commerce in these jurisdictions.

Carbon black does not contain substances identified under SARA, Title III, Section 302, as extremely hazardous, or under Section 313 as a toxic chemical. Carbon black must be reported as a hazardous chemical on Tier I and Tier II reports, under SARA Sections 311/312, if the threshold quantity of 10,000 lbs is exceeded annually.

Special Shipping Information

The Intergovernmental Maritime Consultative Organization (IMCO) does classify carbon black as a "hazardous cargo" for the purposes of shipping, unless the shipment is accompanied by a statement that the carbon blacks contained in it are not subject to the IMCO code provisions for hazard class 4.2 because they pass the test for non-activated carbons described on page 4082-1. All CABOT carbon blacks pass this IMCO test and may be shipped with this disclaimer.

The Bureau of Explosives of the Association of American Railroads has ruled it is unnecessary to classify carbon black as hazardous under DOT regulations. Carbon black is moved as a non-hazardous material by rail.

CABOT

DEC 23 1991

December 9, 1991

To: CABOT CUSTOMERS USING CARBON BLACK

The Environmental Health Association of the Carbon Black Industry has learned that two research laboratories, The Lovelace Inhalation Toxicology Research Institute in Albuquerque, New Mexico, and the Fraunhofer Institute in Hannover, Germany, has obtained preliminary results from laboratory studies on rats which link inhalation of high concentrations of various insoluble dusts, such as carbon black and titanium dioxide, for prolonged periods of time with a variety of lung abnormalities.

In these studies, each rat was exposed to high concentrations of a particular airborne dust for 12 - 19 hours daily for periods of up to two years, which resulted in an impaired ability of the lungs to cleanse themselves of deposited particles. Preliminary results show that all of these dusts produced a group of effects on the lung labelled by the researchers as the "Long Overload Phenomenon". These effects include chronic inflammation, fibrosis, and benign and malignant tumors.

Final assessment of the relevance of these preliminary findings must await interpretation, publication, and review of the data. However, the researchers who conducted the tests believe that the effects observed in the rats most likely resulted from chronic inflammation caused by heavy dust accumulations in the deep lung, rather than from a specific chemical effect. Furthermore, epidemiological studies have not found that workplace exposure to carbon black at or below the Threshold Limit Value (TLV) causes these effects in humans. Consequently, it would be inappropriate to conclude from the findings that carbon black will produce disabling pneumoconiosis under conditions of occupational exposure, or that it is a carcinogen.

Cabot is committed to communicating information relevant to the health and safety of its customers and employees. This letter reflects that commitment. In addition, Cabot has modified Section V of its Material Safety Data Sheet (MSDS) for carbon black, in which the studies discussed above are described. A copy of the revised MSDS is attached. If you have any questions or would like further information, please contact your Cabot representative.

P. Fred Gridley
North American Business Manager

21552014

Cabot Corporation
Special Blacks Division
157 Concord Road
Billerica, Massachusetts 01821
(508) 663-3455 Facsimile (508) 667-7152 Telex 6976041

MATERIAL SAFETY DATA SHEET

GOOD-RITE(R) SAN RESINS*

Good-rite®
CHEMICALS

710706
941
846

* Good-rite(R) SAN Resins: 2301, 2301X36

Form Number 25
MSDS Number: 88187
Issue date: DECEMBER, 1988
Supersedes: April, 1986

SECTION I

Manufacturer	Chemical Name/Synonyms	CAS Registry No.
The BFGoodrich Company Elastomers & Latex Division 6100 Oak Tree Blvd. Cleveland, OH 44131 Telephone: 1-800-528-0200	Styrene acrylonitrile copolymer. 2-Propenenitrile, polymer with ethylbenzene.	9003-54-7 Formula $(C_8H_8 \cdot C_3H_3N)x$

Transportation Emergency Telephone
CHEMTREC: (800) 424-9300

TOSCA Status
On EPA Inventory

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

	C.A.S. Number	Amount in Product*	ACGIH TLV-TWA	OSHA PEL
Acrylonitrile	107-13-1	<30 ppm	2 ppm, A2, skin	2 ppm
Styrene (See Appendix)	100-42-5	<0.1%	50 ppm, skin	100 ppm

* Typical amount - not a specification.
- TLV-TWA: Threshold Limit Value - Time Weighted Average for concentration of the chemical substance in the ambient workplace air for a normal 8-hour workday, 40-hour workweek, to which nearly all workers may be repeatedly exposed without adverse effect. American Conference of Governmental Industrial Hygienists, 1988/1989 Edition.
- OSHA PEL: OSHA Permissible Exposure Limit, 8-hour TWA. 29CFR1910.1000 and 1910.1045.
- The "skin" notation calls attention to the skin as an additional significant route of absorption of the listed chemical.
- A2 means "suspected human carcinogen" (ACGIH).

21552015

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS (Typical data, not specifications)

Boiling Point	Melt Point	Specific Gravity (H_2O=1)
Not applicable (NA)	400-450°F (200-232°C)	1.05-1.15

Solubility in Water	% Volatile by Weight	Appearance and Odor
Insoluble	<1% (moisture)	Fine (respirable) opaque powder (~87% through 200 mesh sieve).

Vapor Density (Air=1)	Vapor Pressure	pH
NA	NA	NA

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point	Ignition Temperature	Flammable Limits in Air
NA	Dust cloud (estimate): 880°F (470°C)	(% by Volume) Lower: 0.06 oz/ft^3 Upper: Unknown

Extinguishing Media

Water. ABC dry chemical. Protein type air foams. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity may result in reignition.

Special Firefighting Procedure

Do not use methods which may create a dust cloud (e.g. high pressure water stream). Wear positive pressure self-contained breathing apparatus (SCBA). Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source. In enclosed or poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

Unusual Fire and Explosion Hazards

- Minimum concentration for explosion: 0.06 ounces/ft^3
- Minimum energy for ignition: 0.15 Joules
- Maximum rate of pressure rise: 6267 psi/sec. @ 0.2 ounces/ft^3
- Maximum pressure of explosion: 90 psig @ 0.5 ounces/ft^3
- Explosion severity: 2.5

These resins can burn and represent "severe" Explosion Severity on the U.S. Bureau of Mines scale. The resin may be ignited by static electric discharge, electrical arcs, sparks, welding torches, open flame, or other significant heat sources. Also, resin is prone to static electric buildup and discharge. To minimize dust explosion potential:

- Prevent accumulation of dust (e.g., well ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.) Eliminate ignition sources such as sparks or static buildup (e.g. humidification).
- Bond, ground and properly vent containers, conveyors, dust control devices and other transfer equipment. Use only grounded electrically conductive transfer lines when pneumatically conveying resin. Nitrogen or other inert gas can be used to lower the oxygen content of the atmosphere in conveying equipment.
- A properly engineered explosion suppression system should be considered where large amounts of resin are handled. See standards such as the National Fire Protection Association NFPA 654, "Standard for the Prevention of Dust Explosions in the Plastics Industry," NFPA 69, "Explosion Prevention Systems," NFPA 68, "Explosion Venting Protection," NFPA 77, "Static Electricity" and other standards as the need exists.

SECTION V - REACTIVITY DATA

Stability	Hazardous Polymerization
Stable	Will not occur

Hazardous Combustion/Decomposition Products
Dense black smoke, CO, CO_2, HCN and small amounts of aromatic and aliphatic hydrocarbons.

Incompatibility (materials to avoid)
Reacts with strong oxidizing agents such as hydrogen peroxide, permanganates and perchlorates. Depending on the amount and specific materials involved, contact can result in intense heat, boiling, flame development, explosion or toxic gas generation.

SECTION VI - HEALTH HAZARD DATA

Threshold Limit Value	Carcinogenicity	Medical Conditions Aggravated by Exposure
5 mg/m^3: nuisance dust (respirable fraction), OSHA.	Not listed by IARC, NTP or OSHA.	Prolonged dust inhalation may cause aggravation of preexisting lung disorders.

Chronic Health Effects	Routes of Entry
Prolonged dust inhalation can cause lung irritation.	Inhaling dust and/or processing vapors. Eye/skin contact.

Acute Health Effects
Repeated/prolonged contact may cause eye or skin irritation. Processing vapors from this or other plastic materials containing residual acrylonitrile or styrene may cause irritation to eyes, skin and upper respiratory tract, nausea, headache and dizziness.

Effects of Overexposure (Signs and Symptoms of Exposure)
- No adverse health effects are expected during normal processing when potential exposures are eliminated by good industrial hygiene practice and well ventilated conditions. Overexposure to processing fumes or vapors may cause eye, nose and throat irritation, headache, nausea and dizziness.
- Overexposure to decomposition or combustion products will cause irritation of the respiratory tract, eyes and skin. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures taken to avoid exposure.

Emergency and First Aid Procedure
- Eye Contact: Treat as any foreign particulate matter.
- Skin Contact: Wash skin with soap and water. No effects requiring first aid are expected.
- Dust Inhalation: Remove individual to fresh air.

NOTE: For any of the above, if irritation develops, see a physician.

- If irritation persists from exposure to processing vapors or decomposition products, remove the affected individual(s) from the area. Call a physician. Provide protection before allowing reentry.

21552017

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Steps to be taken in case material is released or spilled
Sweep, shovel or vacuum into closed, labeled container for reuse or disposal. Use care to avoid dust generation. Do not flush into public sewer or water system.

Waste Disposal Method
Although these products are not defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261), recognize that in appropriate dust/air ratio, dust cloud in air represents an explosion potential. Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.

Precautions to be taken in handling and storage
- Avoid breathing dust.
- Avoid eye contact and repeated or prolonged skin contact.
- Use under well ventilated conditions.
- Wash thoroughly after handling product. Always wash up before eating, smoking or using toilet facilities.
- Automatic sprinkler protection of indoor storage areas is recommended.

SECTION VIII - CONTROL MEASURES

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 II. Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation, 19th Edition, American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211 ($20.00 as of November, 1988).

Respiratory Protection
Not normally required. If protection against dust is necessary, wear a particulate respirator approved by NIOSH/MSHA. Wear an organic vapor respirator approved by NIOSH/MSHA whenever exposure to fumes or vapors cannot be kept below irritating levels or if levels exceed the limits listed in Section II. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Protective Equipment
- Eye protection suitable for keeping dust out of the eyes.
- Protective gloves.
- Eyewash facility.

SECTION IX - TRANSPORTATION

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, 1986 Edition.

- DOT Proper Shipping Name: Not applicable
- DOT Hazard Class: Not applicable
- DOT Label: Not applicable
- UN/NA Hazard No.: Not applicable
- Reportable Quantity (RQ): Not applicable

SECTION X - HAZARD CODES

NFPA 704*		HMIS**	
Health:	2	Health:	0-1
Flammability:	4	Flammability:	4
Reactivity:	0	Reactivity:	0
Special:	None	Personal Protection:	B

Key: 0 = insignificant; 1 = slight; 2 = moderate; 3 = high; 4 = extreme.

* National Fire Protection Association rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").
** Hazardous Materials Identification System, National Paint and Coatings Assn. rating applies to product "as packaged" (i.e., ambient temp.).

USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should 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, express 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.

APPENDIX - STYRENE

Based upon revised definitions, the International Agency for Research on Cancer (IARC) reclassified styrene monomer from Group 3 to Group 2B (March, 1988). For hazard communication purposes under OSHA Standard 1910.1200, this reclassification requires styrene monomer to be listed as a possible carcinogen. Literature reports indicate that styrene can damage chromosomes (Clastogen). The human health implications of these Invivo/Invitro results are not known. Styrene is not teratogenic but may damage a developing fetus.

BFGoodrich

The BFGoodrich Company
3925 Embassy Parkway
Akron, Ohio 44313-1799

3/20 Bernie
Dr. Bluestein
201/337-2036
will send cc of cover letter

September 18, 1991

Mr. Ron Anderson
FESD, MPI, FSIS
USDA
Washington, D.C. 20205

SUBJECT: <u>8700 A BLACK 288</u>

Dear Mr. Anderson:

One of our customers, Dynamic Closures, is requesting USDA acceptance of an insulation door (dock door) installed in a meat packing plant. In support of their petition we are providing for your evaluation the confidential composition of 8700A Black 288 which is used in this product. Because one of the ingredients in our product is proprietary, we have requested that the Supplier, Witco Chemical, (MSDS attached) forward to you additional information on this tin mercaptide.

Please call me at 216 374-4534 if additional data is needed.

Sincerely,

THE BFGOODRICH COMPANY

Robert K. Hinderer /jp

Robert K. Hinderer, Ph.D.
Manager, Health & Toxicology
Environment, Health and
Safety Management Systems

bcc: Eric Whitewood (Dynamic Closures)

2155202O

BFGOODRICH

CONFIDENTIAL COMPOSITION OF 8700 A BLACK 288

INGREDIENT	WEIGHT %	21 CFR
Geon Resin 30	80.821	Prior Sanction
Hycar 1430X20 ABS Copolymer	4.344	No FDA Approval (MSDS Attached)
Goodrite 2301 94 / 7106 99 Styrene acrylonitrile Copolymer (Cas. No 9003-54-7)	4.097	175.105/ 177.1200 175.300/177.1210 175.320/181.32 176.180
Tin Mercaptide	1.639	No FDA Approval (MSDS Attached)*
Super-PFlex 200 Calcium Carbonate Stearate Coated (Cas. No. 1317-65-3)	6.146	175.300/177.1650 175.390/177.2260 176.170/177.2600 177.1210/177.2800 177.1350/178.3297 177.1460/181.30
Black 1CB-81 MB: 103EPF76 Resin (PVC Resin (Cas. No 9002-86-2)) Monarch 880 (Furnace Black Med. Color) CAS.NO. 1333-86-4 (Carbon Black, Furnace) 013 076 0000	1.315	Prior Sanction ~~177.2600~~ 177.2600 (10%)
Calcium Stearate-Fused	1.639	177.2600 178.2010 181.29 (Prior Sanction)

~~Sanctioned)~~

* Witco to submit to USDA the proprietary formulation for Tin Mercaptide (S-20) they supply BFG.

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Hycar® Elastomers

Form Number 11
MATERIAL SAFETY DATA SHEET

HYCAR(R) ELASTOMERS:

1010X46
1430X20

MSDS Number: 88159
Issue date: NOVEMBER, 1988

SECTION I

Manufacturer	Chemical Name/Synonyms	CAS Registry No.
The BFGoodrich Company Elastomers & Latex Division 6100 Oak Tree Blvd. Cleveland, OH 44131 Telephone: 1-800-528-0200	Elastomeric (nitrile) copolymer	9003-18-3

TOSCA Status
On EPA Inventory

Transportation Emergency Telephone
CHEMTREC: (800) 424-9300

Formula
CH_2 CH:CH $(CH_2)_2$ CH(CN)

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

All additives (except dusting agent) are physically bound in the compound during manufacturing and are not expected to create any hazard when the product is handled and processed in accordance with good manufacturing and industrial hygiene practice and by following the guidelines in this bulletin. Small amounts of the following may be present:

	C.A.S. Number	Amount in Product*	ACGIH TLV-TWA	OSHA PEL
- Acrylonitrile	107-13-1	<20 ppm	2 ppm, A2, skin	2 ppm
- Butadiene	106-99-0	< 5 ppm	10 ppm, A2	1,000 ppm**
- Styrene	100-42-5	<0.01%	50 ppm	100 ppm
- Talc (dusting agent present on 1430X20)	---	3-7%	2 mg/m^3	20 Mppcf

* Typical amount - not a specification.
** OSHA intends to lower this value but has not proposed a specific limit.

(SEE PAGE 2 FOR EXPLANATORY NOTES)

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Explanatory Notes:

- TLV-TWA: Threshold Limit Value - Time Weighted Average for concentration of the chemical substance in the ambient workplace air for a normal 8-hour workday, 40-hour workweek, to which nearly all workers may be repeatedly exposed without adverse effect. American Conference of Governmental Industrial Hygienists, 1988/1989 Edition.
- OSHA PEL: OSHA Permissible Exposure Limit, 8-hour TWA. 29CFR1910.1000 and 1910.1045.
- The "skin" notation calls attention to the skin as an additional significant route of absorption of the listed chemical.
- A2 means "suspected human carcinogen" (ACGIH).

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS (Typical data, not specifications)

Boiling Point	pH	Specific Gravity (H_2O=1)
Not applicable (NA)	NA	0.95-1.02
Solubility in Water	**% Volatile by Weight**	**Appearance and Odor**
Insoluble	<1% (moisture)	1010X46: Cream colored slab. 1430X20: Light brown powder.
Vapor Density (Air=1)	**Vapor Pressure**	Mild odor is characteristic.
NA	NA	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point	Ignition Temperature	Flammable Limits:
NA	700°F (373°C)*	Lower explosion limit: NA
	* ASTM D-1929	Upper explosion limit: NA

* Result obtained on Hycar® 1092-80. It is considered to be representative of the typical value expected for all Hycar® nitrile elastomers.

Extinguishing Media

Water. ABC dry chemical. Protein type air foams. Hycar® nitrile 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 Procedure

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

Unusual Fire and Explosion Hazards

None expected for elastomer as delivered.

NOTE: As delivered, powder elastomers do not represent a dust explosion hazard based on tests using the Hartmann vertical tube apparatus. These elastomers do not contain "fines," or dust, of sufficient particle size or amount to propagate ignition by this method of test.

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CAUTION: Grinding powder elastomers may produce particles small enough to create a dust explosion potential. As the need exists, implement standard safety precautions for handling finely divided powders such as eliminating likely sources of ignition, including static buildup, providing adequate ventilation, properly maintaining and operating dust control devices, and properly bonding and grounding processing equipment.

SECTION V - REACTIVITY DATA

Stability	Hazardous Polymerization	Incompatibility
Stable	Will not occur	Conditions to avoid: Overheating Materials to avoid: None known

Hazardous Decomposition Products

CO, CO_2, HCN 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 VI - HEALTH HAZARD DATA

Threshold Limit Value	Carcinogenicity	Medical Conditions Aggravated by Exposure
None established by OSHA or ACGIH.	Products not listed by IARC, NTP or OSHA.	None known for product as delivered.

Acute Health Effects	Chronic Health Effects	Routes of Entry
None known.	None known.	Inhaling process vapors. Skin contact.

Effects of Overexposure

- None expected at ambient temperature. Talc (dust) may cause eye irritation in the same manner as nuisance dust. Dust can cause shortness of breath, chronic cough or upper respiratory tract irritation.
- 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 sum total of all ingredients may emit fumes and vapors that may cause irritation to the respiratory tract, eyes and/or skin of sensitive people. 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.
- Overexposure to decomposition or combustion products will cause irritation of the respiratory tract, eyes and skin. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures taken to avoid exposure.

Emergency and First Aid Procedure

- Eye Contact: Treat as any foreign particulate matter.
- Skin Contact: Wash skin with soap and water. No effects requiring first aid are expected.
- Dust Inhalation: Remove individual to fresh air.

NOTE: For any of the above, if irritation develops, see a physician. If irritation persists from exposure to processing vapors or decomposition products, remove the affected individual from the area. Call a physician. Provide protection before allowing reentry.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Steps to be taken in case material is released or spilled
Pick up slabs. Sweep, shovel or vacuum powder, crumbs or chunks into containers for reuse or disposal.

Waste Disposal Method
Landfill or incineration in accordance with federal, state and local regulations. These products are not defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261).

Precautions to be taken in handling and storage
- Avoid breathing dust.
- Avoid eye contact and repeated or prolonged skin contact.
- Normal Melt Processing. Virtually all elastomers will emit fumes and/or vapors when heated to processing temperatures. The concentration and composition of these vapors will depend upon variables such as the specific formulation and processing method and temperature. Always use Hycar® elastomers under well ventilated conditions and avoid continued or prolonged breathing of process vapors. For personal hygiene, wash thoroughly after processing compound, especially before eating, smoking or using toilet facilities. Do not store or consume food in processing areas. Do not use processing equipment to heat food.
- Cleanup 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, it should be noted that exposure to either elevated temperature or excessive heat history (time) will result in decomposition. Equipment should not be shut down for extended time periods with compound in it or decomposition will 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 rubber 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 NIOSH/MSHA approved positive pressure self-contained breathing apparatus.
- Compounding ingredients purchased to add to Hycar® elastomer may require special handling. It is your 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 VIII - CONTROL MEASURES

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 II. Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation, 19th Edition, American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211-4438 ($20.00 as of October, 1988).

Respiratory Protection

Not typically required. If protection against dust is necessary, wear a particulate respirator approved by NIOSH/MSHA. Abnormal conditions such as equipment malfunction, use of improper equipment or procedures, or hangup or stagnation of compound during processing may cause decomposition. If general or local exhaust ventilation is not adequate to keep fume or vapor concentrations at nonirritating levels, then employees involved in removing decomposing material must be provided with suitable air supplied respirators, such as NIOSH/MSHA approved positive pressure self-contained breathing apparatus.

Protective Equipment

- Safety glasses (goggles suitable for keeping dust out of the eyes when handling powdered rubber).
- Protective gloves.

SECTION IX - TRANSPORTATION

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, 1986 Edition.

- DOT Proper Shipping Name: Not applicable
- DOT Hazard Class: Not applicable
- DOT Label: Not applicable
- UN/NA Hazard No.: Not applicable
- Reportable Quantity (RQ): Not applicable

SECTION X - HAZARD CODES

NFPA 704*		HMIS**	
Health:	2	Health:	0
Flammability:	1	Flammability:	1
Reactivity:	0	Reactivity:	0
Special:	None	Personal Protection:	B

Key: 0 = insignificant; 1 = slight; 2 = moderate; 3 = high; 4 = extreme.

* National Fire Protection Association rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

** Hazardous Materials Identification System, National Paint and Coatings Assn. rating applies to product "as packaged" (i.e., ambient temp.).

USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should 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, express 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.

APPENDIX A - ACRYLONITRILE

By simulating manufacturing conditions, we have generated objective data indicating that Hycar® NBR elastomers are incapable of releasing acrylonitrile resulting in airborne concentrations above one (1) ppm under normally expected conditions of handling, processing and use. Exaggerated conditions, including open mill mixing at elevated temperatures, indicates the maximum acrylonitrile level to which a mill operator would be exposed to is less than 0.5 ppm. Based on these data, Hycar® NBR elastomers do not require warning labels under the acrylonitrile standard (OSHA 1910.1045). Customers should not claim exemption from any of the provisions of the OSHA standard by use of BFGoodrich data alone, but should do sufficient in-plant testing of acrylonitrile levels to assure compliance of their operations.

APPENDIX B - BUTADIENE

Personnel monitoring during manufacture of Hycar® 1043 and 1094 elastomer determined that worker exposure level was below 0.2 ppm. This is well below the 10 ppm Threshold Limit Value established by ACGIH. Based on our experience, we expect the presence of butadiene in the ambient workplace air to be below 1.5 ppm for all Hycar® elastomers.

APPENDIX C - STYRENE

During March, 1988, based upon revised definitions, the International Agency for Research on Cancer (IARC) reclassified styrene monomer from Group 3 to Group 2B. For hazard communication purposes under OSHA Standard 1910.1200, this reclassification requires styrene monomer to be listed as a possible carcinogen. Literature reports indicate that styrene can damage chromosomes (Clastogen). The human health implications of these Invivo/Invitro results are not known. Styrene is not teratogenic but may damage a developing fetus.

WITCO MATERIAL SAFETY DATA SHEET

MARK A

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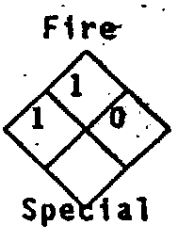
HAZARD RATING
N 4 - Extreme
F 3 - High
P 2 - Moderate
A 1 - Slight
0 - Insignificant



Toxicity

Reactivity

1196

HMIS HAZARD INDEX		HMIS RATINGS	
Hazardous Materials Identification System	4 - Severe	Health	1
	3 - Serious	Flammability	1
	2 - Moderate	Reactivity	0
	1 - Slight	Personal protection	B
	0 - Minimal		

DIVISION AND LOCATION---SECTION I

Division: ARGUS
Location: BROOKLYN, NY
633 COURT ST.,BROOKLYN,NY,11231-2193
Emergency Telephone Number: 718-858-5678
Transportation Emergency: CHEM TREC 1-(800) 424-9300 (U.S. and Canada)

CHEMICAL AND PHYSICAL PROPERTIES---SECTION II

Chemical Name:
alkyltin mercaptide
Formula: trade secret
Hazardous Decomposition Products:
sulfur dioxide
oxides of tin
carbon monoxide and carbon dioxide from burning.
Incompatibility (Keep away from):
strong oxidizers such as hydrogen peroxide, bromine, and chromic acid.
strong mineral acids
Toxic and Hazardous Ingredients:
alkyltin mercaptide
tin compounds (as per State Right to Know lists)
Form: liquid Odor:
Appearance: clear Color: very pale yellow
Specific Gravity (water=1): .999
Boiling Point: not distillable
Melting Point: not applicable
Solubility in Water (by weight %): negligible
Volatile (by weight %): 0
Evaporation Rate: (butyl acetate = 1)less than 1
Vapor Pressure (mm Hg at 20°C): less than 1
Vapor Density (air=1): no data available
Stability: Product is stable under normal conditions
Viscosity SUS at 100°F:

(Continued on next page)

FIRE AND EXPLOSION DATA---SECTION III

Special Fire Fighting Procedures:
Firefighters must be equipped to prevent breathing of vapors or products of combustion. Wear an approved self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards:
Oxides of tin and sulfur are produced at decomposition temperatures.

Flashpoint: (Method Used) Pensky-Martens closed-cup 185°C (365°F)

Flammable limits %: no data available

Extinguishing agents:
Drychemical or Waterspray or Waterfog or CO_2 or Foam or Sand/Earth
Closed containers exposed to fire may be cooled with water.

HEALTH HAZARD DATA---SECTION IV

Permissible concentrations (air):
0.1 mg as tin (OSHA/ACGIH) (skin)

Chronic effects of overexposure:
no data available

Acute toxicological properties:
for similar products: oral LD_{50} about 1100 mg/kg (rat)
for similar products: dermal LD_{50} about 6800 mg/kg (rabbit)

Emergency First Aid Procedures:
Eyes: Immediately flush with large quantities of water for at least 15 minutes and call a physician.
Skin Contact: Wash with soap and water. If irritation occurs, see a physician.
Inhalation: Remove victim to fresh air.
If Swallowed: Call a physician immediately. Induce vomiting if victim is conscious. Never give anything by mouth to an unconscious person.

SPECIAL PROTECTION INFORMATION---SECTION V

Ventilation Type Required (Local,mechanical,special):
Local if necessary to maintain allowable PEL(permissible exposure limit) or TLV(threshhold limit value)

Respiratory Protection (Specify type):
Use NIOSH/OSHA approved respirator with organic vapor cartridge if vapor concentration exceeds permissible exposure limit

Protective Gloves:
neoprene type

Eye Protection:
chemical safety goggles

Other Protective Equipment:
neoprene protective type apron recommended

(Continued on next page)

HANDLING OF SPILLS OR LEAKS---SECTION VI

Procedures for Clean-Up:
Use appropriate protective clothing during clean-up.
Absorb with an inert material such as sand, soil or vermiculite; sweep up and dispose of in accordance with federal, state and local regulations.

Waste Disposal:
Dispose of in accordance with all applicable federal, state and local regulations.
Use controlled incineration with scrubbers for metallic oxides and sulfur dioxide.

SPECIAL PRECAUTIONS---SECTION VII

Precautions to be taken in handling and storage:
Do not store near strong oxidizing agents or concentrated acids. Keep drums tightly closed.

TRANSPORTATION DATA---SECTION VIII

D.O.T.: Not Regulated
Reportable Quantity: not applicable
Freight Classification:
Special Transportation Notes:

ENVIRONMENTAL/SAFETY REGULATIONS---SECTION IX

Section 313 (Title III Superfund Amendment and Reauthorization Act):
This product does not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Signature: Otto Kauder _____
Title: Vice President, Technical
Original Date: 11/07/85 Sent to: _____
Revision Date: 05/12/89 _____
Supersedes ___: 11/07/85 _____
Date Sent ___: _____

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.