BFGoodrich

AN-5627

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

September 18, 1991

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

SUBJECT: 8700 A BLACK 288

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)

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CONFIDENTIAL COMPOSITION OF 8700 A BLACK 288

INGREDIENT	WEIGHT %	21 CFR
Geon Resin 30	80.821	Prior Sanction
Hycar 1430X20	4.344	No FDA Approval (MSDS Attached)
Goodrite 2301	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	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 Monarch 880 (Furnace Black Med. Color) CAS.NO. 1333-86-4	1.315	Prior Sanction 177.2600
Calcium Stearate-Fused Sanctioned)	1.639	177.2600 178.2010 181.29(Prior

* 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.

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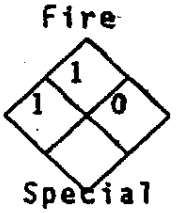
HAZARD RATING
N 4 - Extreme
F 3 - High
P 2 - Moderate
A 1 - Slight
0 - Insignificant



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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)

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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.

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Connie,
Please check recipe.

Bob

BFGoodrich

TO: Bob Hinderer

DATE	TIME	
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MR.
MRS.
MS. Eric Whitwood

COMPANY: Dynamic Closures

ADDRESS:

TELEPHONE NO: (817) 547-0070

Telephoned	☐	Please Call	☐
Returned Your Call	☐	Will Call	☐
Wants To See You	☐	Came To See You	
SPECIAL ATTENTION	☐	URGENT	☐

MESSAGE:
Needs FDA approval on Blood Black
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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: 8/28/91

TO: Connie Dillon

FAX NO.: x 3975

FROM: Bev Zaller

PHONE: (216) 933-1629

FAX NO.: (216) 933-1678

NOTES: MSDS for 71082I.
the section your looking for
is at the bottom of the second
page of the MSDS.

Bev

TOTAL NUMBER OF PAGES 9 INCLUDING THIS COVER LETTER.

IF ALL PAGES ARE NOT RECEIVED, OR ILLEGIBLE, PLEASE CALL BACK IMMEDIATELY.

(FAX.CVP)

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January 1989

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BFGoodrich

GEON® VINYL COMPOUND MATERIAL SAFETY DATA

2250516

ABOUT THIS BULLETIN

The data in this bulletin applies to all Geon® vinyl compounds except polyblends (blend of polyvinyl chloride and nitrile rubber). Geon® vinyl compounds are mixtures of thermoplastic polyvinyl chloride resin, which is a white granular powder, and functional additives such as processing aid, heat stabilizer, plasticizer, lubricant, impact modifier, pigment and/or other ingredients. Compound may be prepared as either granules (i.e., pellets of varying size and shape) or free-flowing powders.

Although they may vary in terms of physical properties or other characteristics, safety and handling precautions are similar for all compounds. *Please note:* Pellet compound does not represent any inhalation hazard because of its physical form. However, fine particle size additives in powder compound may result in airborne dust. Respiratory protection against nuisance dust may be necessary when handling powder compound.

The data in this bulletin does not include any information on the suitability of vinyl for any particular application nor does it discuss any precautions that may apply to specific end products. Moreover, 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. We must rely on you to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

For information pertinent to resin, please read BFGoodrich Bulletin, "Material Safety Data, Geon® Vinyl Resin." Also, a separate safety data bulletin is available for Geon® vinyl polyblend compounds.

SPECIAL NOTE: Vinyl chloride and polyvinyl chloride (PVC) are not the same material. Vinyl chloride is a flammable gas that is strictly regulated by the Ontario Ministry of Labour (OML). Through a chemical reaction, this gas — known as a monomer — is converted to a non-hazardous white granular powder called polyvinyl chloride resin, PVC, or simply, vinyl. It is this vinyl resin that is then combined with functional additives to make compound. Vinyl resin is [illegible] Moreover, the reaction is not reversible. That is, thermal processing or decomposition will not cause polyvinyl chloride to revert back to vinyl chloride monomer. (See Section II.)

SECTION I

PRODUCT INFORMATION

Manufacturer's Name	B.F.Goodrich Canada Inc.
Address	195 Columbia St. W., Waterloo, Ont. N2J 4N9
Telephone Number	(519) 888-4318 (Technical)
Trademark	Geon® Vinyl
Chemical Name/Synonyms	Poly (vinyl chloride)/Flexible Compound Poly (vinyl chloride)/Rigid Compound Poly (vinyl chloride)/Rigid Powder Compound
Formula	Vinyl resin* plus functional additives *$(CH_2CHCl)_n$
Chemical Family	Vinyl resin: chloroethene polymer
CAS Registry Number	Not applicable to compounds
Transportation Emergency Telephone	CANUTEC (613) 996-6666

- Virtually all Geon® vinyl compounds are manufactured with homopolymer polyvinyl chloride resin (CAS Registry Number: 9002-86-2). We do market a limited number of compounds based upon vinyl chloride/vinyl acetate copolymer resin.
- Specific grades of Geon® vinyl compounds comply with applicable provisions of the U.S. Food and Drug Administration regulations governing food contact (21CFR). Please consult product literature for details.
- Geon® vinyl resin and the functional additives used to manufacture compound are included in the Toxic Substances Control Act, Inventory of Chemical Substances, developed by the U.S. Environmental Protection Agency.

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SECTION II

HAZARDOUS INGREDIENTS

- Vinyl resin contains a very small amount of residual vinyl chloride monomer (CAS Registry Number: 75-01-4). Extensive product and process improvements have resulted in the reduction of residual monomer to average levels less than 1 5 parts per million (ppm) in the vinyl resins used to manufacture compound. Today, there is virtually no employee exposure to vinyl chloride monomer [illegible] ppm when handling or processing GEON™ vinyl compounds. Please read Section below on Vinyl Chloride Monomer (VCM) for workplace exposure limits.
- The sum total of ingredients present in virtually any thermoplastic compound will emit vapors and odors during processing. The visible fumes that occur during normal processing of vinyl compound are mainly water vapor. Trace amounts of hydrogen chloride, an irritant, are possible if there is any hangup or stagnation of compound in processing equipment. Vapors from non-PVC components are principally trace amounts of volatiles from stabilizers, plasticizers, lubricants, etc. Some people may be sensitive to fumes or odors from these additives. The primary effect is irritation to the eyes, respiratory tract or skin. To protect your employees' health, conduct any operation emitting fumes or vapors under well-ventilated conditions.
- Functional additives mixed with vinyl resin to create compounds may include:

GEON VINYL COMPOUND/FLEXIBLE — GROUP 1 AND 2

— Stabilizer generally in amounts less than 5% by weight. These may include organometallics such as tin, lead, cadmium, barium and zinc and metallic salts such as tri basic lead sulfate. (Lead stabilized flexible compounds fall under Group 2. All remaining flexible compounds fall under Group 1.)

— Commercially available pigments based on iron oxide, carbon black, chromium, ultramarines, titanium dioxide, cadmiums, phthalocyanines, molybdates, lead, quinacridones and other organic or inorganic materials.

— Polymeric, monomeric or mixed ester plasticizer in amounts generally between 20-50% by weight in plasticized compound. Plasticizers are volatile when heated, and they will contribute to the sum total of the vapors released during processing.

GEON VINYL COMPOUND/RIGID — GROUP 3 & GEON VINYL COMPOUND/RIGID POWDER — GROUP 4

— Stabilizer generally in amounts less than 5% by weight consisting of organotins.

— Commercially available pigments based on iron oxide, carbon black, chromium, ultramarines, titanium dioxide, cadmiums, phthalocyanines, molydates, lead, quinacridones and other organic or inorganic materials.

In pellet compound, additives are bound-up in the manufacturing process and are not expected to create any hazard when handled or processed in accordance with good manufacturing and industrial hygiene practices and by following the guidelines presented in this bulletin. With powder compound, respiratory protection against nuisance dust may be required.

Please read section below on Functional Additives used in PVC Compound for more information about additives and hazardous substances.

FUNCTIONAL ADDITIVES USED IN PVC COMPOUND

Additives chosen for a specific compound will vary according to processing and final product requirements. The following list does not represent all possible additives but it does represent typical ingredients which may be used in vinyl compounds.

- **Stabilizer** inhibits thermal degradation of the compound during processing and throughout the service life of the product. Stabilizers may be grouped into four classes: organometallic tins, lead salts, mixed metal salts and special-purpose stabilizers. The most common organometallic tin stabilizers are tin mercaptides, mainly methyl tin and butyl tin. Some stabilizers, including di-n-octyl and dimethyl tin mercaptide, are FDA acceptable for food contact applications. Lead salts, like dibasic lead phosphite, are mainly organic lead compounds and include sulfates, silicates, phosphates, stearates, phthalates and maleates. Mixed metal salts include calcium-zinc and barium-cadmium systems. Special-purpose stabilizers include flame retardants such as antimony derivates and ultraviolet light absorbers. Stabilizer will typically be present in amounts up to 5% by weight.
- **Processing aids.** The most common processing aids used with vinyl compound are acrylics or styrene-acrylonitrile copolymers present at levels up to 5.0% by weight.
- **Impact modifiers** commonly used with vinyl include acrylates, chlorinated polyethylene, methacrylate-butadiene-styrene (MBS), acrylonitrile-butadiene-styrene (ABS), and rubber. Although not present in all compounds, when used, impact modifier may range up to 20% by weight.
- **Fillers.** Most common are metal carbonates, mainly calcium carbonate, which is usually in the form of ground limestone and coated with stearic acid. Other fillers may be silicates, gypsum, clay, alum and barytes.
- **Plasticizer.** Many kinds of plasticizers are available such as dioctyl, dihexyl and dibutyl phthlates, phosphate esters such as isodecyl diphenyl phosphate, aliphatic alcohol esters such as dioctyl adipate, polymeric plasticizer such as polyesters of adipic adic, and monomeric esters such as trimellitate. Dioctylphthlate is FDA acceptable for food contact applications. When used in flexible vinyl compound, plasticizer concentration will generally range between 20-50%, by weight.
- **Lubricants** include paraffin waxes, mineral oils, polyethylene, salts of fatty acids and fatty acids, esters and amides. Lubricants would be present up to approximately 5%.
- **Pigment.** A list of common pigments appears in Section II. Pigments may be present up to 5% to achieve opacity and color. In weatherable compounds, titanium dioxide may be present at concentrations up to 10-15% to achieve acceptable ultraviolet ligh screening.

VINYL CHLORIDE MONOMER (VCM)

Employee exposure to vinyl chloride monomer (CAS Registry Number: 75-01-4), a carcinogen, is regulated by O.M.L. The current regulation requires that no employee may be exposed to VCM concentrations greater than 2.0 ppm (parts per million by volume) averaged over any 40 hour period, or 10 ppm maximum.

The regulation applies to the manufacture, packaging, repackaging, storage, handling or use of vinyl chloride or polyvinyl chloride. Typically, purchasers of vinyl compound for processing purposes must comply with the permissible exposure limits set by O.M.L. Moreover, the regulation requires a program of initial monitoring in each facility to determine if there is any employee exposure.

Monitoring of vinyl processing and fabricating plants and modeling studies show that 0.5 ppm cannot be exceeded when residual VCM is at or below 8.5 ppm in Geon® vinyl compound. Shipping containers for these compounds are not labeled by BFGoodrich unless a customer specifies otherwise.

Polyvinyl chloride is not a cancer suspect agent. It is the trace amount of unreacted vinyl chloride monomer that must be controlled, not the vinyl itself.

Although some containers may be labeled, this does not necessarily mean that employee exposure to VCM will exceed permissible exposure limits. Using "worst case" conditions of thermal processing, our studies show that more than 30 ppm of unreacted monomer in vinyl resin is needed to cause 0.5 ppm to be present in the atmosphere of a hot, poorly ventilated workplace. For further information, please read BFGoodrich Technical Service Bulletin No. 12, "Vinyl Studies." Good ventilation in those areas where VCM might concentrate — such as where containers are stored and first opened, where materials are mixed and where compound is melted — will further ensure a work environment virtually free of VCM.

SECTION III
PHYSICAL DATA
(Typical data, not specifications)

Solubility in Water — Slight

Specific Gravity ($H_2O = 1$) — Range: 1.15-1.55

Appearance and Odor

Pigmented or unpigmented pellets or powder. Practically odorless or bland odor. The appearance of pellet compound will vary from cubical granules measuring approximately 3/16-inch per side to spheres to wafers depending upon manufacturing method.

Other

Characteristics such as vapor pressure, vapor density, boiling point and evaporation rate are not applicable to solid materials such as vinyl compound.

SECTION IV
FIRE AND EXPLOSION HAZARD DATA

Ignition Characteristics (ASTM D-1929)

Rigid vinyl compound (i.e., no plasticizer) has a flash-ignition temperature of about 391°C (735°F) and a self-ignition temperature of about 454°C (850°F). When plasticizer is added, ignition temperatures decrease. At a 30% plasticizer content, the flash-ignition temperature will be about 321°C (610°F) and the self-ignition temperature will be about 435°C (815°F). By themselves, most vinyl compounds (i.e., rigid compound and compound with less than about 35% plasticizer) will not support combustion because they require a higher concentration of oxygen for burning than is present in the earth's atmosphere. Any vinyl compound can be forced to burn by continuous application of intense heat. Like all combustible material, protect from open flame and maintain proper clearance when using portable heat devices, etc. Store flammable liquids away from vinyl compound.

Flash-Ignition Temperature: The lowest initial temperature of air passing around the specimen at which sufficient combustible gas is evolved to be ignited by a small external pilot flame.

Self-Ignition Temperature: The lowest initial temperature of air passing around the specimen at which, in the absence of an ignition source, ignition occurs of itself, as indicated by an explosion, flame or sustained glow.

Extinguishing Media

Water is most effective. ABC dry chemical, AFFF, and protein type air foams are also effective. Geon® vinyls are "ordinary combustibles" (NFPA defined Class A). Carbon dioxide is not generally recommended for use on Class A fires as a lack of cooling capacity may result in reignition.

Special Fire Fighting 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.

Combustion Products

When forced to burn, the primary combustion gases from vinyl compound will be hydrogen chloride, carbon monoxide and carbon dioxide. Other gases will include small amounts of benzene and aromatic and aliphatic hydrocarbons. Plasticized compounds will also contribute aliphatic olefins.

The combustion products of vinyl resin, like those from other natural and synthetic materials, must be considered toxic. Like wood, paper and cotton, the major hazard is carbon monoxide. Carbon monoxide is an asphyxiant while hydrogen chloride is an irritant. When vinyl is burned, it will have a detectable, pungent odor.

Unusual Fire and Explosion Hazards

- Hydrogen chloride has a corrosive effect on many metals. Affected equipment surfaces and unprotected structural elements of buildings should be washed to remove corrosive deposits as soon as possible after depositions have occured.
- Pellet compound does not represent any explosion risk because of its large particle size. Powder compound may have dust explosion potential because of fine particle size fillers and additives or liquids added to vinyl resin.

For plasticized powder compound, the National Fire Protection Association (NFPA) reports the following for a PVC/plasticizer mixture (i.e., 67% PVC/33% dioctyl phthalate):*

Explosibility index:	2.9 (Strong)
Ignition sensitivity:	3.6 (Strong)
Explosion severity:	0.8 (Moderate)
Ignition temp., dust cloud:	320°C (608°F)

*NFPA 654-1975, "Prevention of Dust Explosions in the Plastics Industry".

Because of the wide variety of possible ingredient combinations, operations using plasticized or unplasticized powder compound should be evaluated on an individual basis. Implement precautions to control or eliminate likely sources of ignition, such as static build-up. Maintain good housekeeping; notably, ventilation, to prevent accumulation of potentially explosive dust concentrations. Properly maintain and operate dust control devices.

SECTION V
TOXICOLOGICAL PROPERTIES

Threshold Limit Value
None established.

Effects of Overexposure

- There are no significant health hazards from vinyl compound at ambient temperature (see Dust Exposure).
- No adverse health effects are expected from processing vinyl compound when potential exposures are minimized by good industrial hygiene practice and adequate ventilation. Nevertheless, individual additives and/or various combinations of additives may affect the overall toxicological properties. Detailed studies have not been performed on each of the many possible additive combinations. At processing temperatures, additives may emit fumes and vapors that are irritating to the respiratory tract, eyes or skin of some sensitive people. This depends upon processing technique and temperature, volume processed and, most importantly, the effectiveness of exhaust ventilation provided to the process area.
- Inhalation of decomposition or combustion products, especially hydrogen chloride, will cause irritation of the respiratory tract, eyes and skin. Depending on the severity of exposure, physiological response will be coughing, pain and inflammation. Individuals with bronchial asthma and other types of chronic obstructive respiratory diseases may develop bronchspasm if exposure is prolonged.

SPECIAL NOTE: Hydrogen chloride is detectable by its sharp, pungent odor in concentrations as low as 1-5 ppm. Low concentrations (below 50 ppm) are not harmful in short-term exposures, but do provide excellent warning properties by causing coughing or irritation. Because the protective response is so strong, humans rarely submit to damaging concentrations — instead, there is an unmistakable urge to leave the area. Repeated or prolonged exposure to high concentrations can cause eye and respiratory damage. In studies sponsored by the Federal Aviation Administration, no incapacitation, no impairment to escape and no significant post-exposure effects occurred in baboons exposed to hydrogen chloride up to 11,400 ppm (1.14%). OSHA has established a ceiling limit of 5 ppm for workplace exposure to hydrogen chloride.

Dust Exposure
(Geon Vinyl Compound/Rigid Powder)
Fine particle size additives in powder compound may result in airborne dust. Routine inhalation of dust of any kind should be avoided. Exercise care when dumping bags, sweeping, mixing or doing other tasks which can create dust. Where large amounts of any dust may occur, wear a respirator approved by NIOSH/MSHA to protect against nuisance dust.

SECTION VI
REACTIVITY DATA

Stability — Stable

Hazardous Polymerization — Will not occur

Hazardous Decomposition Products
Hydrogen chloride, carbon monoxide, carbon dioxide, and small amounts of benzene and aromatic and aliphatic hydrocarbons. Plasticized compounds will also contribute aliphatic olefins.

Incompatibility (materials to avoid)
Avoid contact with acetal or acetal copolymers and with amine containing materials during processing. At processing conditions these materials are mutually destructive and involve rapid degradation. Thoroughly purge and mechanically clean processing equipment to avoid even trace quantities of these materials from coming in contact with each other. Prevent cross contamination of feedstocks.

SECTION VII
PREVENTATIVE MEASURES

Steps to be taken in case material is released or spilled
Vacuum or sweep into a closed container for reuse or disposal.

Waste Disposal Method
Dispose of waste in a licensed landfill or by incineration in accordance with federal, provincial and local regulations. For waste disposal purposes, Geon® vinyl compounds are not defined or designated as hazardous. If incinerated, be aware that hydrogen chloride is

SECTION VIII
FIRST AID MEASURES

Emergency and First Aid Procedure

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 IX
PREPARATION INFORMATION

Prepared by: BFGoodrich WHMIS Co-ordinators

Date: February, 1989

TRANSPORTATION

For domestic transportation purposes, vinyl compounds are not classified as hazardous by Transport Canada under the Transportation of Dangerous Goods Act.

SPECIAL PROTECTION INFORMATION

Ventilation

Provide effective exhaust ventilation to draw dust and/or fumes away from workers to prevent routine inhalation. Compounding, hot melt processing (extruding, molding, etc.), cutting or sawing, machining, regrinding, heat welding, thermoforming, and other processing or post-processing operations involving heat sufficient to result in polymer breakdown should be examined to ensure adequate ventilation.

Ventilation guidelines and techniques may be found in the following publications.

— NIOSH Recommended Industrial Ventilation Guidelines; GPO #017-033-00136-7. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 ($9.00 U.S. as of December 1984).

— Industrial Ventilation, 18th Edition. Available from the American Conference of Governmental Industrial Hygienists, 6500 Glenway Ave., Bldg. D-5, Cincinnati, Ohio 45211 ($16.00 U.S. as of December 1984).

Respiratory Protection

Not normally required. Abnormal conditions such as equipment malfunction, use of improper equipment or procedures, or hangup or stagnation of compound during processing may cause decomposition. Employees involved in removing decomposing material should be provided with suitable air-supplied respirators, such as NIOSH/MSHA - approved positive pressure, self-contained breathing apparatus.

Protective Equipment

Not normally required. Wear protective gloves when handling hot material during processing. Safety glasses are recommended for all industrial workplaces.

SPECIAL PRECAUTIONS

Normal Melt Processing. Virtually all thermoplastic materials 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 compound formulation and processing method and temperature. Always use vinyl compound 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 melt processing should be performed under well-ventilated conditions. Vinyl compound may be held at process temperatures for a short time without significant thermal degradation, However, it should be recognized 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 and possible corrosion of unprotected metal may result. If dies and screws are not to be cleaned manually, then compound should be purged from processing equipment prior to shutdown using special vinyl purge compound or a compatable thermoplastic such as general purpose ABS (do not use flame-retarded or halogen-containing grades for this purpose).

*Time and temperature required to initiate degradation will vary depending upon processing technique, degree of compound stabilization and other factors. As a general rule-of-thumb, degradation begins to occur about one hour at 177°C (350°F), about ten minutes at 204°C (400°F) and within five minutes at 232°C (450°F).

In case of power loss or other mishap, shut off the machine and dismantle the die assembly as soon as possible before degradation or decomposition begins. If decomposition begins (with gassing and "popping" sounds) before the die can be disassembled, dangerously high pressure may occur in the die system. In this event, shut off the machine, clear the area of personnel and wait until decomposition stops. Thoroughly ventilate the area. Remove and disassemble the die system. These are guidelines only. Refer to technical service reports and bulletins (such as BFGoodrich Bulletin G-63 "Injection Molding Guide, Rigid Geon® Vinyls) and to equipment manufacturer's recommendations for further information.

Regrinding scrap normally generates substantial heat. Cool regrind before placing it in containers. The excellent insulating quality of vinyl will prevent heat in the center of a container from escaping, potentially resulting in slow thermal decomposition of the material. This may not only render the product unsatisfactory for further processing but also results in fumes and vapors being released into the workplace atmosphere.

Remove vinyl resin from walkways and floors to prevent slippery footing. Always wear rubber gloves when cleaning condensate from exhaust equipment or other surfaces.

BFGoodrich

B.F.Goodrich Canada Inc.
195 Columbia St. W.
Waterloo, Ontario
N2G 4N9
(519) 888-4318

BFG52247

BFGoodrich

B.F.Goodrich Canada Inc.
195 Columbia St. W.
Waterloo, Ontario
N2G 4N9
(519) 888-4318

ROUTE TO: BATH COMPUTER ROOM

****

* GEON VINYL TECHNICAL DOCUMENT *

****

CUSTOMER NO / DESC: BFG CANADA

R103360 G E O N V I N Y L RECIPE 08/28/91 11:34:35

OSHA WARNING LABEL: A

NO EXT PROD DESC ON DATABASE LOC: 10 DEPT: 5772 ISSUE: 101

COMMODITY NO.: 78710 000 2880 EFFECTIVE DATE: 11/06/86

SBC NBR: 13C1 DELETE FLAG: NO

LAB REF: CANADIAN RECIPE CMPR: BFG CANADA/CVP

BASED ON: BFG CANADA RECIPE 8700A 2880

APPLICATION: PROFILE EXTRUSION

PARTS	INGREDIENTS	SEQ	LOC	PERCENT
98.63200	961 000277 30 GEON RESIN	110	10	80.821
5.30000	942 710701 1430 X 20	210		4.343
5.00000	941 710699 2301	220		4.097
2.00000	912 008020 TIN MERCAPTIDE	310		1.639
7.50000	925 709635 SUPER-PFLEX 200	410		6.146
1.60500	923 710821 BLACK 1CB-81 MB	510		1.315
2.00000	943 00L034 CA STEARATE-FUSED	620		1.639
122.03700		TOTAL		100.000

SPECIFIC GRAVITY: 1.37 HARDNESS:

TYPE SAMPLE: X COLOR: 1

MATCHED TO:

ISSUED: TO MAKE CHANGE PER BFG CANADA.

MARKETING APPROVAL:

C2050522

W I T C O M A T E R I A L S A F E T Y D A T A S H E E T

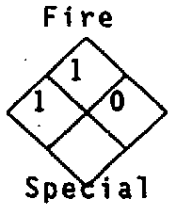
MARK A

JUN 0 5 1990

S-20
912

JUN 0 5 1990

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



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)

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BFG52249

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.

22505023

BFG52251

DYNAMIC®

. . . new dimensions in Security

August 27, 1991

B.F. Goodrich

Att: Dr. Bob Hinderer

Re: 8700A-288

Dear Sir:

The address for the USDA is as follows:

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

Thank you for your immediate attention to our problem.
As discussed he is looking for the chemical breakdown of the product to verify its use in the meat packing industry.

Sincerely,

Eric Whitwood

Eric Whitwood

ATT: CONNIE DILLON

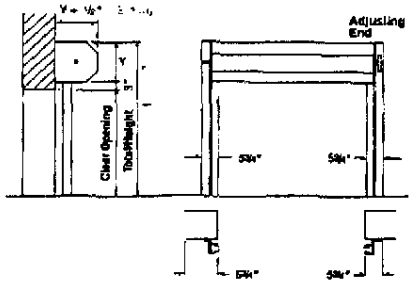
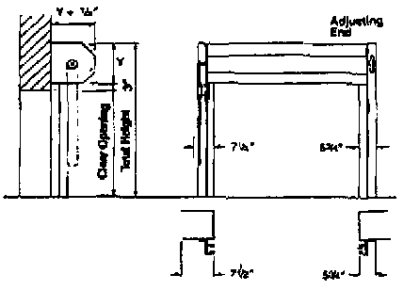
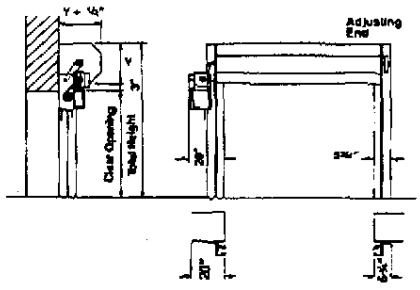
8700228

DYNAMIC CLOSURES CORP.
1304 Oak Hill Drive, Copperas Cove, Texas 76522 Tel: (817) 547-0070 Fax: (817) 547-5070

DYNAMIC®

08330/DYNc

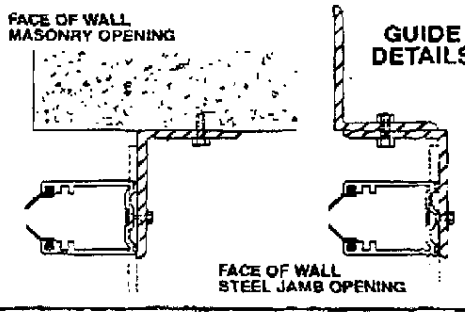
CLEARANCE DETAILS

MANUAL OPERATION	CHAIN OPERATION	MOTOR OPERATION
		

INSUL-AIR™ SERIES

	STEEL	ALUMINUM		
OPENING HEIGHT	Y	Y	Y	Y
to 8'-0"	17	19	21	23
– 10'-0"	19	21	23	25
– 12'-0"	21	21	25	27
– 14'-0"	21	25	27	31
– 16'-0"	23	25	29	33
– 20'-0"	25	29	31	35
DOOR THICKNESS	1"	1⅛"	1⅝"	2³⁄₁₆"

GUIDE DETAILS



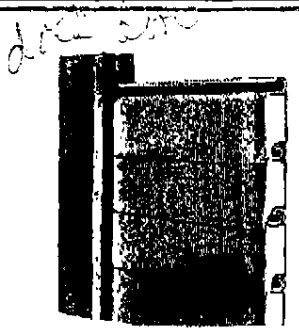
HOODS (Optional)
Not Required With Lintel Seals.
Coil to be housed with a minimum 24 gauge galvanized steel sheet metal hood, with a high-grade zinc coating per ASTM Standards. Lintel weatherstripping to be applied to minimize air infiltration and is comprised of a special combination aluminum and P.V.C. weather seal attached to the lintel extending the full width of the opening.

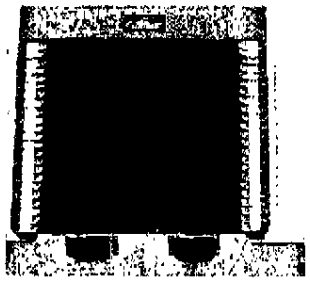
VISION PANELS
Where indicated furnish double glazed clear glass over individual slat cutouts, 5" wide × ¾" high × 3 cutouts wide.

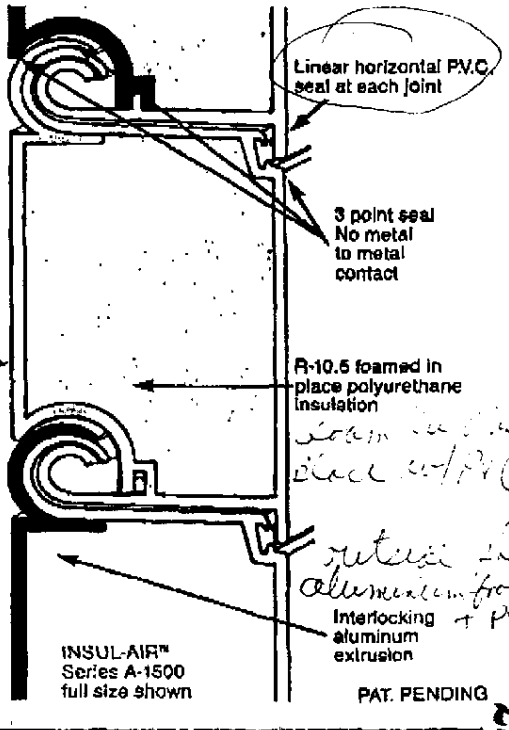
FINISHES
Finish for ungalvanized surfaces is to consist of a shop coat of metallic primer. Standard aluminum finish is mill and is available in clear anodize, medium bronze acrylic paint, or an acrylic paint finish of the architects choice. Other finishes included black, light, medium or dark bronze hard colour anodizing all available as optional extras.

Operation is to be by Gearhead Operators, with suitable H.P. as determined by the manufacturer, or chain hoist for doors under sq. ft.

Installation is to be by manufacturer or his authorized representative.







Distinguishing Characteristics of Dynamic's "Foamed-in-Place" Polyurethane (UCO-393/905-005 1.4 p.c.f. System)
FIRE RETARDANT CLASS 2 CANDIDATE
*Non-Friable
*Excellent Adhesion to Metal Substrates *K-Factor (Initial) – 0.12 BTU/ft. /°F./Hr./in.

2250020

BFG52253

AUTOMATIC COVER SHEET

Insulation door

Dock door already installed in meat packing plant need USDA approval & supply to purge their all doors

refrigerated meat truck backs up to meat plant (dock door) doors open then meat into meat packing plant

DATE: SEP-10-91 TUE 7:32

TO:

FAX #: 12163742238

FROM: DYNAMIC CLOSURES CORP.

FAX #: 18175475070

03 PAGES WERE SENT

(INCLUDING THIS COVER PAGE)

BFG52254

216 374 2238

B.F.GOODRICH
TELEFAX MESSAGE

B.F.GOODRICH CANADA INC
195 COLUMBIA ST. W.
P.O. BOX 1625, WATERLOO, ONT
N2J 4N9
(519) 888-4300

TELEFAX NO.(519) 888-4302
IF YOU DO NOT RECEIVE ALL PAGES - PLEASE CALL AUDRE - (519) 888-4318

DATE: 09/09/91

TO: BFG- BATH.

ATTENTION: MS. CONNIE DILLON

FROM: BILL FAY - B.F.GOODRICH

PAGES TOTAL: 1 (INCLUDING COVER PAGE)

NOTES:

Carbon black

Connie:

Here is rec'd not to exceed 50% by wt of rubber product
Black Masterbatch All 177.2600 pg 302

(961 000023) 103 EPF76 Resin for [illegible]-4785

(710033) Monarch 880 [illegible]

1762

If you need anything further pls let me know.

Regards.

Bill.

2250E030

BFG52255

FACSIMILE MESSAGE

BFGOODRICH COMPANY
6100 OAK TREE BOULEVARD
CLEVELAND OHIO 44131

TEL.: ( ) 447-6517
FAX: (216) 447-6459

DATE: Aug 27 TIME: 1113 pm

DELIVER TO: Bert Hinshaw
Bell

FROM: Mail Room
Cleveland

MESSAGE:

Total number of pages 2 including this cover letter. If all pages have not been received, please call Kris Peters at 2 0-447-6517.

2250051

BFG52256

C103D326 BFGOODRICH GEON VINYL DIVISION USERID: N50MSH1A
C103F326 GEON ROD RECIPE INQUIRY PTERMID: PV120100

PRODUCT NBR: 78710 000 2880 8700A BLACK 288 LOC: 10 DEPT: 5772 ISSUE: 101

SDC: 1301 EFFECTIVE DATE: 861106 INTERMEDIATE RM NBR:
TOTAL LBS RM: 122.037000 LBS PRODUCT: 122.037000 RECIPE TYPE: 2

PAGE 1 OF 1

SEQ	RAW MATL	DESCRIPTION	QUANTITY	LC	PERCENT	COMMENTS
110	961-000277	30 GEON RESIN	98.632000	10	80.8214	PS
210	942-710701	1430 X 20	5.300000		4.3429	none
220	941-710699	2301 Goodrite	5.000000		4.0971	yes
310	912-008020	TIN MERCAPTIDE	2.000000		1.6388	none
410	925-709635	SUPER-PFLEX 200	7.500000		6.1457	yes
510	923-710821	BLACK 1CB-81 MB ?	1.605000		1.3152	yes 11772600
620	943-00L034	CA STEARATE-FUS	2.000000		1.6388	yes

MB ... EPTON
3314

NEXT RESPONSE: NEXT KEY:
3900016 RECIPE INQUIRY OK PF5-PROP PF6-RMKS PF9-SAFE PF10-INST
B/LT-1 Aa 23/018

2250322

BFG52257