

Appendix B

Item 232-1: Handbook 130, Method of Sale Regulation

Section 2.13.4. Declaration of Weight

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FROM: A. Godwin, Ventura County, California

Specification and Tolerance Committee:

Method of sale regulations require that Polyethelene sheeting and bags be labeled with:

1. Length and width
2. Thickness in mil or micron
3. Count (bags only)
4. Net weight

The theoretical weight is used by weights and measure officials to verify the required net weight statement. The net weight for the product is determined by the dimensions stated on the label. If the thickness is missing then the net weight cannot be verified. If the count of the bags is missing, the net weight cannot be verified. However, if the label has no net weight, but is labeled otherwise in full compliance (1-3) then a theoretical net weight can be calculated.

Now, there are several misunderstandings within the plastics industry.

1. The Plastics Industry believe they have a 10% Tolerance on the net weight and
2. Weights and Measures can only test polyethylene by weight.

First there has never been a 10% or any tolerance for polyethylene products.

Second, we test by weight as a courtesy to the holder of the product. All dimensions are required to be accurate. If the bag has an inaccurate length, width, thickness or count, weights and measures can still test the product. We can open the boxes in the sample; measure the length by unrolling the product. We can destroy the bags by cutting the bags in half to measure the mil. We can test and average the dimensions of the bags and count the total bags inside the box. All of these testing procedures of course will render the product no longer able to go back into the original box and will increase the testing time substantially.

Several years ago TYCO plastics contacted Marianne Delnerdang and

used it too there advantage. If Weights and Measures can only hold us to 0.92 g/cm³ then they could have an automatic 3% advantage in their weights. For example take the following dimensions

40 in x 48 in x 0.5 mil x 500 ct HDPD Can Liners

Using 0.92 g/cm³ the net weight for this box would be 31.91 lb. Using 0.95 g/cm³ the net weight for this box would be 32.95 lb

$32.95 - 31.91 = 1.04$ $1.04 / 32.95 = .003 \times 100 = 3\%$

If the manufacturer of this product places a net weight statement on this label at 32.00 LB, then we as weights and measures officials can only hold the product to 32.00 lbs. This means that when I test the product and it averages 32.00 lbs net weight, I know the product is still short measure on one or more of the dimensions or count, since the product is not making a net weight at 32.95 lbs. As a weights and measures official, I can use this formula now to identify that this product has a shortage because I know that as a high density product this package is short on one or more dimensions. Therefore, I can start opening the boxes and measuring the product inside.

The original formula was developed when the only Poly product out there was linear low density. This is the minimum density for linear low density is 0.92 g/cm³ which is reflected in the FIB 133 formula. The formula was developed and agreed upon so that weights and measures officials would test the product without destroying the product. Unless there is a change made to the formula officially recognizing the different densities then the only option left for weights and measures officials is to test to the dimensions to ensure fair value comparisons. Allowing an unfair advantage to the HDPE Distributors is not an option. We will just use the industry recognized density factor to identify the short measure product. It is their choice to correctly label density.

Respectfully,

Angela Godwin
Deputy Sealer
County of Ventura, California

PLASTICS i i r
CORPORATION AND
SUBSIDIARIES
LEADERSHIP BY DESIGN

June 26, 2010

National Conference on Weights and Measures 1135 M Street
Suite 110
Lincoln, Nebraska 68508
E-mail • don.onwiler@ncwm.net
Attn: Don Onwiler

RE: Proposed Changes to Handbook 130, Method of Sale Regulation Section 2.13.4. "Declaration of Weight"

Dear Don:

This letter is in reference to the proposed changes to Handbook 130, Method of Sale Regulation Section 2.13.4. "Declaration of Weight" (copy attached).

As you know, we attended the NCWM meeting in Nashville this year to present Berry Plastics' opposition to the above referenced Handbook 130 proposed changes. The purpose of this letter is to reiterate our opposition to this proposal.

Background

Berry Plastics Corporation is a leading manufacturer and marketer of HDPE and LLDPE Institutional Can Liners. Berry Plastics is a long time participant in this market and is well versed in the category mechanics and needs of stakeholders (end user, distributor and manufacturer).

Recommendation

Berry Plastics respectfully requests the NCWM Laws and Regulations Committee reject the above referenced proposal for three reasons:

- 1) **Blends** — Most HDPE Can Liners utilize blends of various materials (HDPE, LLDPE, LDPE and post consumer and post industrial resins as well as additives). The current use of the .92 density factor sets a bottom limit on product weight. If the .95 density factor is adopted it will require manufacturers to overstate the weight of the product.
- 2) **Convention** — HDPE Can Liner product weights based on the .92 density factor are well accepted in the industry and the category participants (manufacturers, distributors and end users) are very accustomed to these product weights. Instead of clarifying the issue, changing the density factor will actually lead to confusion in the marketplace.

- 3) **Sustainability** — The strongest reason for rejecting this proposal relates to Sustainability. The Institutional Can Liner market is untracked; however, we estimate the size of the HDPE segment at 400 million pounds per year.
- a. If the .95 density factor is adopted, and if industry increases product weights an additional **12 million pounds** of plastic will find its way into the waste stream.
 - b. Just the production of this additional plastic will generate an additional **18.5 million pounds of CO₂**.
 - c. Additional CO₂ would be generated to transport and package the heavier product.

Given the above, we strongly recommend that this proposed revision be rejected.

Don, as always we appreciate all you do for the organization and we thank you for reviewing our position on this proposal.

I look forward to seeing you in St. Paul this July. Best regards,



Michael T. Jackelen
Vice President
Berry Plastics Corporation
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Minneapolis, MN 55431
mikejackelen@berryplastics.com Telephone
Number — 952/885-9232

CC Lisa Warfield (lisa.warfield@nist.gov)

Material Safety Data Sheet



1. Chemical product and company identification

Product name POLYETHYLENE (HDPE) HOMOPOLYMER
 MSDS # 000002010
 Historic MSDS #: None.
 Code 000002010 (NAP)
 Product use Consumer products. Industrial applications.
 Supplier Innovene USA LLC
 200 E. Randolph Drive
 Chicago, IL 60606
 Emergency phone: 1 (800) 424-9300
 Outside the US: +1 703-527-3887 (CHEMTREC)
 OTHER PRODUCT INFORMATION 1 (888) 260-6737 Toll free - North America
 email:MSDS@innovene.com

2. Composition/information on ingredients

| Ingredient name | CAS # | % by weight |
|-----------------|-----------|-------------|
| Polyethylene | 9002-88-4 | 95 - 100 |

3. Hazards identification

Physical state Granular solid. Pellets. Powder or flakes solid.
 Color White, translucent or colorless.
 Emergency overview This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria.
 Handling and/or processing of this material may generate dust which may cause mechanical irritation of the eyes, skin, nose and throat.
 Routes of entry Dermal contact. Eye contact. Inhalation. Ingestion.
 Potential health effects
 Eyes No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns. When heated to decomposition it emits acrid smoke and irritating fumes.
 Skin No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns.
 Inhalation Dust; Exposure to airborne concentrations well above the recommended exposure limits may cause irritation of the nose, throat, and lungs. Vapor: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath.
 Ingestion No significant health hazards identified.
 Medical conditions aggravated by over-exposure None identified.
 See toxicological information (section 11)

| | | | | | |
|--------------|---------------------------------|---------------|-----------------|----------|-------------------------|
| Product name | POLYETHYLENE (HDPE) HOMOPOLYMER | MSDS # | 000002010 (NAP) | Page: | 1/5 |
| Version | 1 | Date of Issue | 08/03/2005. | Format | US-COMP |
| | | | | Language | ENGLISH. (ENGLISH) |

4. First aid measures

| | |
|--------------|--|
| Eye contact | Hot material: Flush eyes with plenty of water for at least 15 minutes. Seek medical assistance for mechanical removal of this material from the eye. The use of flush fluid, other than water, is not recommended. Cold material: flush eyes with plenty of water. Get medical attention if irritation occurs. |
| Skin contact | If burned by contact with hot material, flush skin immediately with large amounts of cold water. If possible, submerge area in cold water. No attempt should be made to detach polymer adhering to the skin or to remove clothing attached with molten material. Thermal burns require immediate medical attention. Cold material: Wash with soap and water. |
| Inhalation | If affected by fumes from heated material, remove from source of exposure and move the affected person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. |

5. Fire-fighting measures

| | |
|--------------------------------------|---|
| Flammability of the product | May be combustible at high temperature. |
| Auto-ignition temperature | >343 °C |
| Flash point | Above 300°C decomposition occurs and flash of fumes may occur. |
| Products of combustion | These products are carbon oxides (CO, CO ₂). May also contain low levels of aldehydes, ketones, organic acids or hydrocarbons. |
| Unusual fire/explosion hazards | High dust concentrations have a potential for combustion or explosion. This material is not explosive as defined by established regulatory criteria. |
| Fire-fighting media and instructions | In case of fire, use water spray (fog), foam or dry chemicals. Do not use water jet. |
| Protective clothing (fire) | Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. |

6. Accidental release measures

| | |
|--|---|
| Personal precautions | IN CASE OF A LARGE SPILL: Contact emergency personnel. Eliminate all ignition sources. Granules spilled on the floor can cause slipping. Fine dust clouds may form explosive mixtures with air. Do not touch or walk through spilled material. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures"). |
| Environmental precautions and clean-up methods | If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. See Section 13 for Waste Disposal Information. |
| Personal protection in case of a large spill | Chemical/Dust Goggles. Personnel should wear protective clothing. |

7. Handling and storage

| | |
|----------|--|
| Handling | There is a risk of being splashed with molten materials. Thermal burns are the most common injury caused while processing molten material. Do not inhale fumes or vapor from molten product. Use with adequate ventilation. When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product. Pneumatic conveying of powder and pellets can generate large static electrical charges. Electrical discharge in presence of air can cause an explosion. Earth all equipment. High dust concentrations have a potential for combustion or explosion. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. |
|----------|--|

| | | | | |
|--------------|---------------------------|----------------|-------------------|-----------|
| Product name | | MSDS # | 0009002010 (NAP) | Page: 2/5 |
| Version 1 | Date of issue 08/03/2005. | Format US-COMP | Language ENGLISH. | |
| | | | (ENGLISH) | |

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep away from heat and direct sunlight.

The main hazards are related to pallet stock slippage and forklift truck maneuvers, which can cause injury to personnel. It is highly recommended that adequate procedures covering storage handling of pallets are established and maintained. These procedures must be kept up to date and regularly audited. In most cases, best practice is to stack pallets no more than 2 high. However, facilities responsible for storing the material should perform a site specific risk assessment to determine whether pallets can be stacked safely.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name

Occupational exposure limits

Polyethylene

ACGIH TLV (United States, 2005).

TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction PNOS

TWA: 3 mg/m³ 8 hour(s). Form: Respirable fraction PNOS

Control Measures

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Hygiene measures

Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Personal protection

Eyes

Safety glasses with side shields. Use dust goggles if high dust concentration is generated.

Skin and body

Hot material: Wear heat-resistant protective gloves, clothing and face shield that are able to withstand the temperature of the molten product.

Respiratory

Cold material: None required; however, use of protective clothing is good industrial practice.

Product processing, heat sealing of film, or operations involving the use of wires or blades heated above 300°C may produce dust, vapor or fumes. To minimize risk of overexposure to dust, vapor or fumes it is recommended that a local exhaust system is placed above the equipment, and that the working area is properly ventilated.

If ventilation is inadequate, use certified respirator that will protect against dust/mist.

Hands

Hot material: Wear heat-resistant protective gloves that are able to withstand the temperature of molten product.

Cold material: None required; however, use of gloves is good industrial practice.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your supervisor or S.O.P. for special handling directions

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

| | |
|------------------------------|---|
| Physical state | Granular solid. Pellets. Powder or flakes solid. |
| Odor | Odorless. |
| Color | White, translucent or colorless. |
| Melting point / Range | 126 to 135 °C |
| Specific gravity | 0.93 to 0.97 |
| Density | Pellet density: 930-970 kg/m ³ (0.930 to 0.970 g/cm ³) |
| Solubility | Insoluble in cold water. |

| | | | | |
|--------------|---------------------------------|---------------|-----------------|-------------|
| Product name | POLYETHYLENE (HDPE) HOMOPOLYMER | MSDS # | 000002010 (NAP) | Page: 3/5 |
| Version | 1 | Date of issue | 08/03/2005. | Format |
| | | | | US-COMP |
| | | | | Language |
| | | | | ENGLISH. |
| | | | | (ENGLISH) |

10. Stability and reactivity

| | |
|--|---|
| Stability and reactivity | The product is stable. |
| Conditions to avoid | Stable under recommended storage and handling conditions (See Section: "Handling and storage"). If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath. Avoid dusting when handling and avoid all possible sources of ignition (spark or flame). To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. |
| Incompatibility with various substances | None identified. |
| Hazardous decomposition products | These products are carbon oxides (CO, CO ₂). May also contain low levels of aldehydes, ketones, organic acids or hydrocarbons. |
| Hazardous polymerization | Will not occur. |

11. Toxicological information

Chronic toxicity

| | |
|-----------------------------|--|
| Carcinogenic effects | No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA). |
| Mutagenic effects | No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen. |
| Reproductive effects | No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin. |
| Teratogenic effects | No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic. |

12. Ecological information

| | |
|-------------------------------------|---|
| Ecotoxicity | No testing has been performed by the manufacturer. |
| Persistence/degradability | Not inherently biodegradable (polymer). |
| Mobility | This product is lighter than water and will float on the surface. This product is not likely to move rapidly with surface or groundwater flows because of its low water solubility. |
| Bioaccumulative potential | This product is not expected to bioaccumulate through food chains in the environment. |
| Other ecological information | Wildlife may ingest plastic pellets or bags. Although not toxic, such materials may physically block the digestive system, causing starvation or death. |

13. Disposal considerations

| | |
|--------------------------|--|
| Waste information | Recycle to process, if possible. Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations. |
|--------------------------|--|

Consult your local or regional authorities.

14. Transport information

Not classified as hazardous for transport (DOT, TDG, IMO/IMDG, IATA/ICAO)

| | | | | |
|---------------------|----------------------------------|-----------------------|--------------------------|------------------|
| Product name | POLYETHYLENE (HDPE) HOMOPOLYMER | MSDS # | 000002010 (NAP) | Page: 4/5 |
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15. Regulatory information

| | |
|---------------------------------|---|
| U.S. Federal regulations | US INVENTORY (TSCA): In compliance. This product is not regulated under Section 302 of SARA and 40 CFR Part 355. This product does not contain any hazardous ingredients at or above regulated thresholds. |
| SARA 313 | |
| Form R - Reporting requirements | This product does not contain any hazardous ingredients at or above regulated thresholds. |
| Supplier notification | This product does not contain any hazardous ingredients at or above regulated thresholds. CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4):: This material is not regulated under CERCLA Sections 103 and 107. |
| State regulations | No products were found. |
| | |
| Inventories | AUSTRALIAN INVENTORY (AICS): In compliance. CANADA INVENTORY (DSL): In compliance. CHINA INVENTORY (IECS): In compliance. EC INVENTORY (EINECS): In compliance. (Polymer, exempt from listing.) JAPAN INVENTORY (ENCS): In compliance. KOREA INVENTORY (ECL): In compliance. PHILIPPINE INVENTORY (PICCS): In compliance. |

16. Other information

Label requirements

This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria.

HMIS® Rating :

| | | |
|----------------------------|---|--|
| Health | 0 | National Fire Protection Association (U.S.A.) |
| Flammability | 1 | |
| Physical Hazard | 0 | |
| Personal protection | X | |



History

Date of issue 08/03/2005.
 Date of previous issue No Previous Validation.
 Prepared by Product Stewardship

Notice to reader

NOTICE : This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.

| | | |
|---|---------------------------|----------------------------------|
| Product name POLYETHYLENE (HDPE) HOMOPOLYMER | MSDS # 000002010 (NAP) | Page: 5/5 |
| Version 1 | Date of issue 08/03/2005. | Format US-COMP |
| | | Language ENGLISH. (ENGLISH) |

Technical Information

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HDPE High Density Polyethylene

Description

High Density Polyethylene (HDPE) of The Dow Chemical Company (Dow) encompasses a range of products to balance excellent impact strength, toughness and stiffness as required. The HDPE products are high-purity powders made without any hydrocarbon comonomers and contain no secondary additives.

The following technical information notes a range of product capabilities. Your Dow representative is available to answer your questions and to provide reasonable technical support.

Physical Properties

| Resin Properties | Test Method | Values ¹ |
|------------------------------|--------------------|---------------------|
| Melt Index, 110 g/10 min | ASTM D 1238 | 1-120 |
| Density, g/cc | ASTM D 792 | 0.95-0.97 |
| Melting Point, ° | DSC ² | 130-140 |
| Average Particle Size, µm | Sieve ² | <300 |

¹ Typical values, not to be construed as specifications. Users should confirm results by their own tests.

² Internal test method

Standard packages consist of supersacks of approximately 840 kg (1850 lb).

Handling Considerations

Material Safety Data Sheets (MSDS) for the product are available from Dow providing among other things, use, handling and disposal information. Request current MSDS from your Dow representative prior to working with these products, and read, understand, and practice the information provided. The standard practice of The Dow Chemical Company is to mail applicable MSDS

when customers place an initial order and again when subsequent orders are placed if there has been a revision.

Spills, Disposal

Clean-up of spills is a matter of good general housekeeping. Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled.

Any disposal procedures must be in compliance with all applicable laws and other governmental enactments.

Health Hazards

The HDPE products are very low in single dose oral toxicity, may cause only minor irritation upon eye or skin contact due to mechanical effects, and are not absorbed through the skin. Therefore, they can be handled safely if reasonable care and caution are observed.

Combustibility

HDPE powders can be processed safely. The end user is responsible for hazard evaluation to ensure the compatibility of the HDPE in a specific process. Fine polyethylene dust formation or accumulation may lead to an explosive mixture with air. In addition, conveying or handling the product may cause a static ignition hazard. Refer to National Fire Protection Association (NFPA) RP77 "Recommended Practice on Static Electricity" for guidance in reducing the fire hazards associated with static electricity.

Product Stewardship

The Dow Chemical Company and its subsidiaries (Dow) has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our Product Stewardship program rests with each and every individual involved with Dow products — from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Dow Medical Application Policy

Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

- permanent (Long term) contact with internal body fluids or internal body tissues. Long term is a use which exceed 72 continuous hours (except 30 days for PELLETHANE™ polyurethane elastomers);
- use in cardiac prosthetic devices regardless of the length of time involved; (Cardiac prosthetic devices include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass assisted devices);
- use as a critical component in medical devices that support or sustain human life; or
- use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Additionally, all Products intended for use in pharmaceutical applications, other than pharmaceutical packaging, must pass the current Pharmaceutical Liability Guidelines.

- For the products sold by the Plastics Portfolio, new business opportunities require a business assessment prior to sale or sampling of Dow products.
- Authorized distributors and resellers will adhere to this medical policy.
- The Dow Chemical Company does not endorse or claim suitability of their products for specific medical application. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS**

Disclaimer

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligation or liability for the information in this document. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

NOTICE: If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; and (3) there is greater potential for Dow to change specifications and/or discontinue production.

Additional Information

| | | | |
|----------------------|------------------|---------------------------|-----------------|
| North America | | Europe/Middle East | +800-3694-6367 |
| U.S. & Canada: | 1-800-441-4369 | | +32-3-450-2240 |
| | 1-989-832-1426 | | |
| Mexico: | +1-800-441-4369 | | |
| Latin America | | South Africa | +800-99-5078 |
| Argentina: | +54-11-4319-0100 | | |
| Brazil: | +55-11-5188-9222 | | |
| Colombia: | +57-1-319-2100 | Asia Pacific | +800-7776-7776 |
| Mexico: | +52-55-5201-4700 | | +60-3-7958-3392 |

www.dowplastics.com

Published August 2005





Material Safety Data Sheet

Page 1 of 8

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PE3408 (HDPE) Pipe & Fittings (Various Colors)

COMPANY IDENTIFICATION

Performance Pipe, a Division of
Chevron Phillips Chemical Company LP
2929 North Central Expressway #300
Richardson, TX. 75080

EMERGENCY TELEPHONE NUMBERS

HEALTH (24 hr): (800)231-0623 or
(510)231-0623 (International)
TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300 or (703)527-3887
Emergency Information Centers
are located in U.S.A.
Int'l collect calls accepted

PRODUCT INFORMATION: (972) 705-6543

2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % PE3408 (HDPE) Pipe & Fittings (Various Colors)

CONTAINING

| COMPONENTS | AMOUNT | LIMIT/QTY | AGENCY/TYPE |
|------------|--------|-----------|-------------|
|------------|--------|-----------|-------------|

POLYETHYLENE

Chemical Name: ETHENE, HOMOPOLYMER
CAS9002884 > 96.00%

NONE

NA

OR

POLYETHYLENE-BUTENE COPOLYMER

Chemical Name: 1-BUTENE, POLYMER WITH ETHENE
CAS25087347 > 96.00%

NONE

NA

OR

Revision Number: 3

Revision Date: 11/28/00

MSDS Number: 005873

PE3408 (HDPE) Pipe & Fittings (Various Colors)

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POLYETHYLENE-HEXENE COPOLYMER

Chemical Name: 1-HEXENE, POLYMER WITH ETHENE

CAS25213029 > 96.00% NONE NA

ADDITIVES INCLUDING THE FOLLOWING

LEAD CHROMATE PIGMENT

Chemical Name: C.I. PIGMENT YELLOW 34

CAS1344372 < 1.00% NONE NA

CARBON-BLACK

Chemical Name: CARBON-BLACK

CAS1333864 < 4.00% 3.5 mg/m3 ACGIH TWA
3.5 mg/m3 OSHA PEL

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

Colored plastic (red, white, blue, grey, black, orange)

IMMEDIATE HEALTH EFFECTS

EYE:

Not expected to cause prolonged or significant eye irritation. If this material is heated, thermal burns may result from eye contact.

SKIN:

Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. If this material is heated, thermal burns may result from skin contact.

INGESTION:

Not expected to be harmful if swallowed.

INHALATION:

Not expected to be harmful if inhaled. If this material is heated, fumes may be unpleasant and produce nausea and irritation of the upper respiratory tract.

SIGNS AND SYMPTOMS OF EXPOSURE:

Thermal burns to the eye: may include pain, tearing, reddening, swelling, and impaired vision. Thermal burns to the skin: may include pain or feeling of heat, discoloration, swelling, and blistering. Respiratory irritation: may include coughing and difficulty breathing.

4. FIRST AID MEASURES

EYE:

Revision Number: 3 Revision Date: 11/28/00 MSDS Number: 005873

PE3408 (HDPE) Pipe & Fittings (Various Colors) Page 3 of 8

If heated material should splash into eyes, flush eyes immediately with fresh water for 15 minutes while holding the eyelids open. Remove contact lenses, if worn. Get immediate medical attention.

SKIN:

If the hot material gets on skin, quickly cool in water. See a doctor for extensive burns. Do not try to peel the solidified material from the skin or use solvents or thinners to dissolve it. The use of vegetable oil or mineral oil is recommended for removal of this material from the skin.

INGESTION:

No specific first aid measures are required because this material is not expected to be harmful if swallowed.

INHALATION:

Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

FLAMMABLE PROPERTIES:

FLASH POINT: NA

AUTOIGNITION: NA

FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA

EXTINGUISHING MEDIA:

CO2, dry chemical, foam and water fog

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

If possible, water should be applied as a spray from a fogging nozzle since this is a surface burning material. The application of high velocity water will spread the burning surface layer.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, original monomer, other hydrocarbons and hydrocarbon oxidation products, depending on temperature and air availability.

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887

International Collect Calls Accepted

ACCIDENTAL RELEASE MEASURES:

Not applicable.

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7. HANDLING AND STORAGE

Avoid contact of heated material with eyes, skin, and clothing. Avoid breathing vapor or fumes from heated material.

Improper or careless handling of these products can result in serious personal injury or possibly death, especially during loading, unloading, movement or installation. Please take all necessary precautions and follow manufacturer's published procedures for safely handling these products,

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS

Use in a well-ventilated area. If heated material generates vapor, or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure. Ventilation requirements must be locally determined. If handling results in dust generation, special ventilation may be needed to ensure that dust exposure does not exceed the OSHA PEL for nuisance dust.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION:

No special eye protection is normally required. If this material is heated, wear chemical goggles and a face shield if engineering controls or work practices are not adequate to prevent eye contact.

SKIN PROTECTION:

No special protective clothing is normally necessary. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate to prevent skin contact.

RESPIRATORY PROTECTION:

No respiratory protection is normally required. If heated material generates vapor or fumes that are not adequately controlled by ventilation, wear a NIOSH approved respirator. Use the following

respirators: Organic Vapor.

9. PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL DESCRIPTION:

Colored plastic (red, white, blue, grey, black, orange)

pH: NA

VAPOR PRESSURE: NA

VAPOR DENSITY

(AIR=1): NA

BOILING POINT: NA

MELTING POINT: 122C (252F)

SOLUBILITY: Insoluble in water

SPECIFIC GRAVITY: 0.95

DENSITY: 0.95 g/cm³

EVAPORATION RATE: 0

PERCENT VOLATILE

(VOL): 0%

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.

CHEMICAL STABILITY:

Stable.

CONDITIONS TO AVOID:

Do not heat without adequate ventilation.

INCOMPATIBILITY WITH OTHER MATERIALS:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Avoid contact with organic solvents. May react with free halogens.

HAZARDOUS POLYMERIZATION:

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:

The eye irritation hazard is based on data for a similar material.

SKIN EFFECTS:

The skin irritation hazard is based on data for a similar material. The acute dermal toxicity is based on data for a similar material.

ACUTE ORAL EFFECTS:

The acute oral toxicity is based on data for a similar material.

ACUTE INHALATION EFFECTS:

The acute respiratory toxicity is based on data for a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains polymerized ethylene. During thermal processing, this polymer can degrade. The three variables which control its degradation are the temperature, the length of time at that temperature, and the amount of oxygen available. Depending on the local processing conditions, a variety of low molecular weight hydrocarbons, alcohols, aldehydes, acids, and ketones can be formed. These materials are respiratory irritants. Prolonged and repeated breathing of fume

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components has been shown to cause other adverse health effects. Exposure to processing emissions should be minimized by following all recommendations in this MSDS.

Pigments containing carbon black, lead chromate, nickel, antimony, or titanium compounds may have been incorporated into this product. The International Agency for Research on Cancer (IARC) has classified carbon black as a Group 2B carcinogen (possibly carcinogenic to humans) based on "sufficient evidence" in animals and "inadequate evidence" in humans. However, the pigments in this product are bound in a polymer matrix which severely limits its extractability, bioavailability and toxicity. The lead chromate pigment is also silica-encapsulated as well as bound in the polymer matrix. None of these pigments is likely to cause adverse health effects under recommended conditions of use.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is not expected to be harmful to aquatic organisms.

ENVIRONMENTAL FATE:

This material is not expected to be readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Contact local environmental or health authorities for approved disposal of this material.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE
FEDERAL DOT

DOT HAZARD CLASS: NOT APPLICABLE

| | |
|----------------------------------|--|
| STEL - Short-term Exposure Limit | TPQ - Threshold Planning Quantity |
| RQ - Reportable Quantity | PEL - Permissible Exposure Limit |
| C - Ceiling Limit | CAS - Chemical Abstract Service Number |
| A1-5 - Appendix A Categories | () - Change Has Been Proposed |
| NDA - No Data Available | NA - Not Applicable |

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may

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be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

THIS IS THE LAST PAGE OF THIS MSDS

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PTT Chemical Public Company Limited

123 Sun Towers Building B, 31st - 35th Floor, Vibhavadi Rangsit Rd.,
Chomphon, Chatuchak, Bangkok 10900, Thailand
Tel. +66 (0) 2265 8400 Fax. +66 (0) 2265 8500

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: **InnoPlus HDPE Black Compound**
Chemical Name and Synonyms: High Density Polyethylene Black Compound
CAS No.: Mixture
Company Identification/Supplier: - PTT Chemical Public Company Limited
14 I-1 Road, Tambon Map Ta Phut, Amphoe
Mueang Rayong, Rayong 21150, Thailand
- Bangkok Polyethylene Public Company Limited
Maptaphut Industrial Estate 4-110 Rd.,
Maptaphut, Muang, Rayong 21150 Thailand
Emergency Telephone No: +66(0)-3892-1191

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | AMOUNT |
|--------------|-----------|---------------|
| Polyethylene | 9002-88-4 | < 100% weight |
| Carbon Black | 1333-86-4 | < 3% weight |
| Additive | Various | < 3% weight |

NOTE:

This product is not considered a hazardous material at temperatures below the melting point as determined in Section 9.

SECTION 3 – HAZARDS IDENTIFICATION

PHYSICAL/CHEMICAL HAZARDS:

This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria. High dust concentrations have a potential for combustion or explosion.

HUMAN HEALTH HAZARDS:

Not classified as dangerous. Handling and/or processing of this material may generate dust which may cause mechanical irritation of the eyes, skin, nose and throat.

ENVIRONMENTAL HAZARDS:

Not classified as dangerous.



EFFECTS AND SYMTOMS:

Eyes

No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns. When heated to decomposition it emits acid smoke and irritating fumes.

Skin

No significant irritation expected other than possible mechanical irritation. Heated material can cause thermal burns.

Inhalation

Dust: Exposure to airborne concentrations well above the recommended exposure limits may cause irritation of the nose, throat, and lungs.

Vapor: If heated to more than 300°C, the product may form vapors or fumes which could cause irritation of the respiratory tract, coughing, and shortness of breath.

Ingestion

No significant health hazards identified.

SECTION 4 – FIRST AID MEASURES

EYE CONTACT

Flush eyes with running water immediately while holding the eyelids open. Remove contact lens, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention.

SKIN CONTACT

Molten resin: If molten material comes in contact with the skin, cool under ice water or running steam of water. Do not attempt to remove the material from the skin. Remove could result in severe tissue damage. Get medical attention.

INGESTION

If swallowed, do not induce vomiting. Give a person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

INHALATION

Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING AGENTS: Water haze, Foam, Chemical powder.

FOR SAFETY REASONS UNSUITABILITY EXTIGUISHING AGENTS: Water jet.

SPECIAL HAZARDS:

Caused by the material, its product of combustion or resulting gases: In case of fire it can release: Water (H₂O), Carbon dioxide (CO₂), and when lacking oxygen (O₂), Carbon monoxide (CO). The products of the burning are dangerous.

PROTECTIVE EQUIPMENT:

Use a mask with universal filler. Use self-contained breathing apparatus within confined rooms.



SECTION 6 – ACCIDENTAL RELEASE MEASURE

- PROTECTIVE MEASURES:** Eliminate all sources of ignition in vicinity of spilled material. Wear appropriate personal protective equipment when cleaning up spills.
- SPILL MANAGEMENT:** Avoid creating dust clouds. Shovel, sweep up or use industrial vacuum cleaner to pick up. Place in container for proper disposal. Reduce airborne dust and prevent scattering by moistening with water. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. If heated material is spilled, allow it to cool before proceeding with disposal method.

SECTION 7 – HANDLING AND STORAGE

INFORMATION FOR SAFE HANDLING:

No special requirements necessary, if handled at room temperature.
Avoid spilling the product, as this might cause falls.
Potential toxic/irritating fumes may be evolved from heated material.
Provide appropriate ventilation for such processing conditions.
Take precautionary measures against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

REQUIREMENTS TO BE MET BY STOREROOMS AND CONTAINERS:

Take precautionary measures to prevent the formation of static electricity.
Do not smoke.

Ground equipment electrically.

INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY:

Not required.

FURTHER INFORMATION ABOUT STORAGE CONDITIONS:

Protect from heat and direct sunlight.

Store under dry conditions.

SPECIFIC APPLICATIONS:

For safe stacking follow the storage recommendations specific for this product.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use in a well-ventilated area. If handling results in dust generation, special ventilation may be needed to ensure that dust exposure does not exceed the OSHA PEL for nuisance dust. If heated material generates vapor or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory system

Product processing, heat sealing of film or operations involving the use of wires or blades heated above 300°C may produce dust, vapor or fumes. To minimize risk of overexposure to dust, vapor or fumes it is recommended that a local exhaust system is placed above the equipment, and that the working area is properly ventilated.

If ventilation is inadequate, use certified respirator that will protect against dust/mist.



Skin and body

Hot material: Wear heat-resistant protective gloves, clothing and face shield able to withstand the temperature of the molten product.

Cold material: None required; however, use of gloves is good industrial practice.

Hand

Hot material: Wear heat-resistant protective gloves able to withstand the temperature of the molten product. Cold material: None required; however, use of gloves is good industrial practice.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eyes

Safety glasses with side shields. Use dust goggles if high dust concentration is generated.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------------------|---|
| PHYSICAL STATE: | Pellets. |
| ODOR: | Slight waxy odor. |
| COLOR: | Black. |
| FREEZING POINT: | Not Applicable. |
| MELTING POINT: | 125 – 135 °C |
| BOILING POINT: | Not Applicable. |
| FLASH POINT: | Not Applicable. |
| DENSITY: | 0.955 – 0.980 g/cm ³ |
| SPECIFIC GRAVITY: | Not Applicable. |
| AUTOIGNITION TEMPERATURE: | Not Applicable |
| EXPLOSIVE PROPERTIES | High dust concentrations have a potential for combustion or explosion |
| PERCENT VOLATILE: | Not Applicable. |
| VAPOR PRESSURE: | Not Applicable. |
| WATER SOLUBILITY: | Insoluble. |

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY:

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Not Applicable.

INCOMPATIBILITY WITH OTHER MATERIALS:

May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Low molecular weight hydrocarbon, carbon dioxide, carbon monoxide, unidentified organic compounds.



SECTION 11 – TOXICOLOGICAL INFORMATION

PRIMARY IRRITANT EFFECT:

ON THE SKIN: No irritant effect.

ON THE EYES: No irritant effect.

SENSITIZATION: No sensitizing effect known.

ADDITIONAL TOXICOLOGICAL INFORMATION:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

SECTION 12 – ECOLOGICAL INFORMATION

MOBILITY AND BIOACCUMULATION POTENTIAL:

Floats on water. There is no bioaccumulation.

OTHER INFORMATION:

This product is not biodegradable.

GENERAL NOTES:

The product is not toxic, small particles can have physical effects on water and Soil organisms.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL CONSIDERATION/WASTE INFORMATION:

Recycle to process, if possible. Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

SECTION 14 – TRANSPORT INFORMATION

TRANSPORT/ADDITIONAL INFORMATION:

According to national and international guidelines, which regulate the road-, rail-, air- and sea-transport, this product is classified as not dangerous.

SECTION 15 – REGULATION INFORMATION

| | | |
|----------------------------------|-----------------------------|------------------|
| U.S. Federal Regulations; | US INVENTORY (TSCA) | : In compliance. |
| Inventories; | AUSTRALIAN INVENTORY (AICS) | : In compliance. |
| | CANADA INVENTORY (DSL) | : In compliance. |
| | CHINA INVENTORY (IECS) | : In compliance. |
| | EC INVENTORY (EINECS) | : In compliance. |
| | JAPAN INVENTORY (ENCS) | : In compliance. |
| | KOREA INVENTORY (ECL) | : In compliance. |

SECTION 16 – OTHER INFORMATION

| | |
|-----------------------|---|
| Date of issue: | Feb-2008 |
| Prepare by: | Technical Support, Polymer VC, PTT Chemical PLC. |
| NOTICE: | This Material Data Sheet has been based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We take no responsibility for inappropriate use, processing and handling by purchasers and users of the product. |





Product Name: PAXON CROSS-LINKABLE HDPE - All Colors Except Red
Revision Date: 04 May 2010
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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: PAXON CROSS-LINKABLE HDPE - All Colors Except Red
Product Description: Polymer, see Section 16 for applicable grades.

Intended Use: Rotational molding

COMPANY IDENTIFICATION

Supplier: EXXONMOBIL CHEMICAL COMPANY
P.O. BOX 3272
HOUSTON, TX. 77253-3272 USA

24 Hour Health Emergency (800) 726-2015
Transportation Emergency Phone (800) 424-9300 or (703) 527-3887 CHEMTREC
Product Technical Information (281) 870-6000/Health & Medical (281) 870-6884
Supplier General Contact (281) 870-6000

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

NOTE: The product may contain varying levels of additives such as slip and anti-blocking agents, anti-oxidants, stabilizers and processing aids.

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

High dust levels may create potential for explosion. Spilled pellets present a slipping hazard on hard surfaces. Thermal burn hazard - contact with hot material may cause thermal burns. Material can accumulate static charges which may cause an ignition.

POTENTIAL HEALTH EFFECTS

Material is essentially non-toxic. However, if dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapors/fumes given off may cause respiratory tract irritation.

| | | | |
|------------------------|-----------|-----------------|---------------|
| NFPA Hazard ID: | Health: 1 | Flammability: 1 | Reactivity: 0 |
| HMIS Hazard ID: | Health: 1 | Flammability: 1 | Reactivity: 0 |

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.



Product Name: PAXON CROSS-LINKABLE HDPE - All Colors Except Red
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SECTION 4 FIRST AID MEASURES

INHALATION

In case of adverse exposure to vapors and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

SKIN CONTACT

Wash contact areas with soap and water. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: High dust levels may create potential for explosion.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Oxides of carbon, Flammable hydrocarbons, Acetic acid

FLAMMABILITY PROPERTIES

Flash Point [Method]: 343C (649F) [Estimated ASTM E136]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: 343°C (649°F) [Estimated]

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The



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National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT

Land Spill: Spilled pellets present a slipping hazard on hard surfaces. Prevent dust cloud. Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas. For Large Spills: Cover spill with plastic sheet or tarpaulin to minimize spreading.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid conditions which create dust. Avoid elevated temperatures for prolonged periods of time. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Material can accumulate static charges which may cause an electrical spark (ignition source). Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight, and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid inappropriate stacking of palletized bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations.

Loading/Unloading Temperature: 20°C (68°F) [Ambient]

Transport Temperature: 20°C (68°F) [Ambient]

Transport Pressure: 101 kPa (15 psia) [Ambient]

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Do not store in open or unlabelled containers.

Storage Temperature: 20°C (68°F) [Ambient]

Storage Pressure: 101 kPa (15 psia) [Ambient]

Suitable Containers/Packing: Boxes; Bags; Hopper Cars

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION



Product Name: PAXON CROSS-LINKABLE HDPE - All Colors Except Red
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Exposure limits/standards for materials that can be formed when handling this product: For dusty conditions, OSHA recommends for particulates not otherwise regulated an 8-hour TWA of 15 mg/m³ (total dust), 5 mg/m³ (respirable fraction); ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m³ (inhalable particles), 3 mg/m³ (respirable particles).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded. **SPECIAL PRECAUTIONS:** Should significant vapors/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that the current ACGIH-TLVs for thermal degradation by-products be observed. Contact your local sales representative for further information.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust / oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:



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If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Solid
Form: Pellet, Powder
Color: Variable
Odor: Odorless
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 60 F): 0.95 - 0.953
Flash Point [Method]: 343C (649F) [Estimated ASTM E136]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: 343°C (649°F) [Estimated]
Boiling Point / Range: N/A
Vapor Density (Air = 1): N/A
Vapor Pressure: N/A
Evaporation Rate (n-butyl acetate = 1): N/A
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: N/A
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/A
Melting Point: 126°C (259°F) - 132°C (270°F)
Hygroscopic: No

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures for prolonged periods of time. High dust concentrations., Do not heat above flashpoint.

MATERIALS TO AVOID: Strong oxidizers, Fluorine



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HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

| | |
|-------------------|----------------------------------|
| SECTION 11 | TOXICOLOGICAL INFORMATION |
|-------------------|----------------------------------|

ACUTE TOXICITY

| Route of Exposure | Conclusion / Remarks |
|-----------------------------|---|
| Inhalation | |
| Toxicity: Data available. | Minimally Toxic. Based on test data for structurally similar materials. |
| Irritation: Data available. | Negligible hazard at ambient/normal handling temperatures. Based on test data for structurally similar materials. |
| Ingestion | |
| Toxicity: Data available. | Minimally Toxic. Based on test data for structurally similar materials. |
| Skin | |
| Toxicity: Data available. | Minimally Toxic. Based on test data for structurally similar materials. |
| Irritation: Data available. | Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials. |
| Eye | |
| Irritation: Data available. | May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. |

CHRONIC/OTHER EFFECTS

For the product itself:

Dust may be irritating to the eyes and respiratory tract.
 Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes and respiratory tract.

Contains additives that are encapsulated in the polymer. Under normal conditions of processing and use the encapsulated additives are not expected to pose a health hazard, however, grinding of the polymer is not recommended.

Contains:

This material may contain carbon black inextricably bound in a polymer. Certain carbon blacks have proved carcinogenic in animal studies. Inhalation animal studies of high concentrations resulted in chronic inflammation, lung fibrosis and lung tumors. Epidemiology studies of workers include findings of bronchitis, pneumonia, emphysema and excess cancer. Carbon black inextricably bound in a polymer or other matrix should present little or no hazard.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
 2 = NTP SUS

3 = IARC 1
 4 = IARC 2A

5 = IARC 2B
 6 = OSHA CARC



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SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to be harmful to terrestrial organisms.

MOBILITY

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

Hydrolysis:

Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis:

Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation:

Material -- Transformation due to atmospheric oxidation not expected to be significant.

BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport



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SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: TSCA

EPCRA: This material contains no extremely hazardous substances.

CWA / OPA: Plastic pellets are defined by the US EPA under the Clean Water Act (40CFR122.26) as a "significant material" which requires any industrial plant that may expose pellets to storm water to secure a storm water permit. Violations of the rule carry the same penalties as other Clean Water Act violations. Pellets found in storm water runoff are subject to EPA regulations with the potential for substantial fines and penalties.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

| Chemical Name | CAS Number | List Citations |
|---------------|------------|----------------|
| CARBON BLACK | 1333-86-4 | 1, 4, 10, 16 |

--REGULATORY LISTS SEARCHED--

- | | | | |
|---------------|------------------|-------------------|-------------|
| 1 = ACGIH ALL | 6 = TSCA 5a2 | 11 = CA P65 REPRO | 16 = MN RTK |
| 2 = ACGIH A1 | 7 = TSCA 5e | 12 = CA RTK | 17 = NJ RTK |
| 3 = ACGIH A2 | 8 = TSCA 6 | 13 = IL RTK | 18 = PA RTK |
| 4 = OSHA Z | 9 = TSCA 12b | 14 = LA RTK | 19 = RI RTK |
| 5 = TSCA 4 | 10 = CA P65 CARC | 15 = MI 293 | |

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 06: Notification Procedures - Header was modified.



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Section 10 Stability and Reactivity - Header was modified.
Section 13: Disposal Recommendations - Note was modified.
Section 08: Personal Protection was modified.
Section 08: Hand Protection was modified.
Section 07: Handling and Storage - Handling was modified.
Section 07: Handling and Storage - Storage Phrases was modified.
Hazard Identification: Physical/Chemical Hazard was modified.
Section 07: Loading/Unloading Temperature C(F) was modified.
Section 07: Transport Temperature C(F) was modified.
Section 07: Transport Pressure kPa was modified.
Section 07: Storage Temperature C(F) was modified.
Section 07: Storage Pressure kPa was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release - Spill Management - Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Autoignition Temperature was modified.
Section 08: Hand Protection was modified.
Section 08: Eye Protection was modified.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Air (IATA) - Header was modified.
Section 14: LAND (TDG) - Header was modified.
Section 14: LAND (DOT) - Header was modified.
Section 15: List Citation Table - Header was modified.
Section 14: LAND (DOT) - Default was modified.
Section 14: LAND (TDG) Default was modified.
Section 14: Sea (IMDG) - Default was modified.
Section 14: Air (IATA) - Default was modified.
Section 16: Materials Covered was modified.
Section 08: Exposure limits/standards was modified.
Section 15: OSHA Hazard Communication Standard was modified.
Section 11: Tox Table - Header was modified.
Hazard Identification: OSHA - May be Hazardous Statement was modified.
Section 06: Notification Procedures was modified.
Composition: Footnotes was modified.
Section 09: Oxidizing Properties was modified.
Section 11: Chronic Tox - Product was added.
Section 01: Product Code - Header was deleted.
Section 11: Chemical Name - Header was deleted.
Section 11: CAS Number - Header was deleted.
Section 11: List Citation - Header was deleted.
Section 11: Tox List Cited Table was deleted.

THIS MSDS COVERS THE FOLLOWING MATERIALS: Crosslinkable HDPE grades for which the grade name consists of a base polymer followed by a suffix referring to an additive package. Paxon 7203 and 7204 are black colored only (carbon black). Applicable designations follow. | Base polymers : | PAXON 7000X | PAXON 7003 | PAXON 7004 | PAXON 7203BLK (Black) | PAXON 7204BLK (Black) | Possible additive packages for PAXON 7003 and PAXON 7004: | BGE | BLK | BLU | BRN | DGR | GRY | JDG | NAT | ORG | PEL | RWK | WHT | YEL

PRECAUTIONARY LABEL TEXT:

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer.



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Caution! Excessive exposure to dust may cause irritation of the nose and throat, and mechanical irritation of the eyes. Avoid generating dust. Use adequate ventilation under dusty conditions to keep airborne levels below recommended exposure limits. If inhaled and symptoms develop, remove to fresh air and get medical attention.

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DGN: 4401772KUS (1007663)

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Warfield, Lisa

From: Kaye Leedham [kaye@amerpkg.com]
Sent: Tuesday, June 21, 2011 7:37 PM
To: jpg4@westchestergov.com; Warfield, Lisa
Subject: Letter of support higher density factor for HDPE
Attachments: Pub 16 excerpt.doc

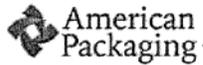
Importance: High

Dear Mr. Gaccione and Ms. Warfield:

I am writing to you in support of higher density factor for HDPE. We are asking that the 0.95 g/cm cubed be recognized as the minimum density factor which would be applied when calculating the net weight of HDPE products. Imports, particularly those from China have an unfair advantage over domestic producers, and this change is necessary to ensure fair competition in our own marketplace.

Sincerely,

Kaye



Kaye Leedham
President/CEO
American Packaging
1515 Alvarado Street
San Leandro, CA 94577
Tel: 510-877-9000
Fax: 510-877-9500
www.amerpkg.com

<http://www.nist.gov/pml/wmd/pubs/upload/pub16-2011-fulldoc-pdf.pdf>

232 METHOD OF SALE REGULATION

232-1 V HB 130, Method of Sale Regulation, Section 2.13.4. Declaration of Weight

Source: Western Weights and Measures Association (WWMA)

Purpose: Update HB 130, Section 2.13.4. to provide new density values for heavier density plastics that are currently in the marketplace.

Item under Consideration: Amend HB 130, Method of Sale Regulation, Section 2.13.4. as follows:

2.13.4. Declaration of Weight. – The labeled statement of weight for polyethylene sheeting and film products under Sections 2.13.1.1. Sheeting and film, and 2.13.3.1. Bags, shall be equal to or greater than the weight calculated by using the formula below. The final value shall be calculated to four digits, and declared to three digits, dropping the final digit as calculated (for example, if the calculated value is 2.078 lb, then the declared net weight shall be 2.07 lb).

For SI dimensions:

$M = T \times A \times D / 1000$, where:

M = net mass in kilograms

T = nominal thickness in centimeters

A = nominal length in centimeters times nominal width [NOTE 6, page 122] in centimeters

D = density in grams per cubic centimeter as determined by ASTM Standard D1505 68, Standard Method of Test for Density of Plastics by the Density Gradient Technique (or latest issue)

For the purpose of this regulation, **when D is not known**, the minimum density (**D**) used to calculate the target net weight for linear low polyethylene products (LLPD) and products other than high density (HDPE) shall be 0.92 g/cm³ (when D is not known).

For products labeled High Density (HDPE) or similar wording, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.

For inch-pound dimensions:

$W = T \times A \times 0.03613 \times D$, where:

W = net weight in pounds;

T = nominal thickness in inches;

A = nominal length in inches times nominal width [NOTE 6, page 122] in inches;

D = density in grams per cubic centimeter as determined by ASTM Standard D1505 68, Standard Method of Test for Density of Plastics by the Density Gradient Technique (or latest issue);

and 0.03613 is a factor for converting g/cm³ to lb/in³.

For the purpose of this regulation, the minimum density shall be 0.92 g/cm³.

(Added 1977) (Amended 1980, 1982, 1987, 1989, 1990, and 1993, and 201X)

NOTE 6: The nominal width for bags in this calculation is twice the labeled width.

Background/Discussion: It was stated at the 2009 WWMA Annual Meeting in Los Cruces, New Mexico, that manufacturers and distributors of polyethylene bags are using the calculated target weight identified in HB 130 Section 2.13.4. to understate the net quantity of their labels. The polyethylene industry recognizes a density value of 0.92 g/cm³ for linear low density polyethylene (LLDP) products. When 0.92 g/cm³ is used to calculate the target net weight of high density polyethylene (HDPE), the product may make the target net weight. However, when the appropriate density value of 0.95 g/cm³ is used to test HDPE, the product often fails to meet the calculated target net weight. Further testing reveals that more than one or more of the labeled width, thickness, or count statements are inaccurate.

It appears that some manufacturers are aware that weights and measures officials are restricted to testing HDPE product using the 0.92 g/cm³ value because the actual density value is not stated on the product label. Existing procedural guidelines do not address HDPE materials. When testing at manufacturing locations, weights and measures officials are able to obtain information regarding the density of the product directly from the manufacturer.

However, at distributor locations density information is not available and officials must test using the 0.92 g/cm³ value designated in HB 130 and HB 133 to verify the weight of the product. When the product has no net weight statement on the package, 0.92 g/cm³ is the only factor that the inspector may use to calculate the target net weight.

Initial proposal as submitted in 2009

Amend HB 130, Method of Sale Regulation, Section 2.13.4. as follows:

2.13.4. Declaration of Weight. – The labeled statement of weight for polyethylene sheeting and film products under Sections 2.13.1.1. Sheeting and film, and 2.13.3.1. Bags, shall be equal to or greater than the weight calculated by using the formula below. The final value shall be calculated to four digits, and declared to three digits, dropping the final digit as calculated (for example, if the calculated value is 2.078 lb, then the declared net weight shall be 2.07 lb).

For SI dimensions:

$M = T \times A \times D / 1000$, where:

M = net mass in kilograms

T = nominal thickness in centimeters

A = nominal length in centimeters times nominal width [NOTE 6, page 122] in centimeters

D = density in grams per cubic centimeter as determined by ASTM Standard D1505 68, Standard Method of Test for Density of Plastics by the Density Gradient Technique (or latest issue)

For the purpose of this regulation, **when D is not labeled on the package, known, the minimum density (D) used to calculate the target net weight for linear low density polyethylene products (LLPD) and products other than high density (HDPE) shall be 0.92 g/cm³ (when D is not known). For products labeled High Density (HDPE) or similar wording which does not specify the minimum density (D) on the package label, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.**

For inch-pound dimensions:

$W = T \times A \times 0.03613 \times D$, where:

W = net weight in pounds;

T = nominal thickness in inches;

A = nominal length in inches times nominal width [NOTE 6, page 122] in inches;

D = density in grams per cubic centimeter as determined by ASTM Standard D1505 68, Standard Method of Test for Density of Plastics by the Density Gradient Technique (or latest issue);

and 0.03613 is a factor for converting g/cm³ to lb/ins.

For the purpose of this regulation, the minimum density shall be 0.92 g/cm³.

(Added 1977) (Amended 1980, 1982, 1987, 1989, 1990, and 1993, and 201X)

NOTE 6: The nominal width for bags in this calculation is twice the labeled width.

The 2009 WWMA Association supports the following item and recommends that it be a Voting item:

2.13.4. Declaration of Weight. – The labeled statement ...

For the purpose of this regulation, the minimum density shall be 0.92 g/cm³ (when D is not known).

For the purpose of this regulation, the minimum density shall be 0.92 g/cm³.

Amend Section 2.13.4. Declaration of Weight as follows:

For the purpose of this regulation, **when D is not known, the minimum density (D) used to calculate the target net weigh for linear low polyethylene products (LLDP) and products other than high density (HDPE) shall be 0.92 g/cm³ (when D is not known). For products labeled “High Density,” HDPE, or similar wording, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.** The NEWMA L&R Committee reviewed this item at its 2009 Interim Meeting and recommends that this proposal be a Developing item.

At the 2010 NCWM Interim Meeting held in Nashville, Tennessee, the Committee heard support for the density factor changing from 0.92 g/cm³ to 0.95 g/cm³ on this item. A California county commissioner

indicated that the information provided by the WWMA was data extracted from Internet searches. Manufacturers are complaining that under current practice they cannot compete fairly.

Mr. Jackelen from Berry Plastics urged the Committee to reject this proposal. Mr. Jackelen stated that 0.92 g/cm³ density currently works for manufacturers and that changing it to 0.95 g/cm³ will cause undue cost and waste. Most manufacturers do not make high density (HD) bags, but are producing blends. According to Mr. Jackelen, another reason to reject the proposal is if the 0.95 g/cm³ bag is punctured, it continues to tear.

A state official commented that if you use the term HD, then you are bound by the 0.95 g/cm³. If you use the length x width x thickness x density to determine the net weight, then the density value needs to be added on the package labeling. A state official said that manufacturers should consider disclosing the density factor on every product as part of the labeling. It was voiced that if there are questions about an absolute 0.95 g/cm³ density, then there should be an alternative.

Another state official commented that the 0.95 g/cm³ will be factored in only when the density is not known. The Committee received letters that were reviewed on this item. The Committee recommended moving the item under consideration forward as a Voting item.

At the 2010 NEWMA Annual Meeting in Groton, Connecticut, there was concern that there appears to be a lack of data on this item. It was never reviewed by all regions and also not presented to industry to seek comments. The NEWMA L&R Committee felt that this item was not an emergency and would like to review comments received from all the regions and industry.

At the 2010 CWMA Annual Meeting in Springfield, Illinois, the CWMA L&R Committee heard no comments on this item and recommends moving it forward as a Voting item.

At the 2010 NCWM National Meeting in St. Paul, Minnesota, the Committee heard from Mr. Jackelen (refer to Appendix B) who opposed this item and requested that it be Withdrawn. Mr. Jackelen believes this proposal will have a detrimental effect because can liners are made of natural gas and oil and the cost of these two items are increasing. Currently, the 0.92 g/cm³ is an established practice in industry and the marketplace and is used to set the bottom weight. Changing this density will cause confusion. Mr. Jackelen clarified that high density (HD) does not mean it is a better density. There are other linear bags that have higher quality than HD. As far as sustainability, if 0.95 g/cm³ is the established requirement it will cause an additional 12 million pounds of trash to be generated.

An official countered that the intent of this proposal is to provide the inspectors with information. There is fraud in the marketplace on these types of items and additional information is warranted. A director recommends that a minor amendment be done to the item under consideration and insert “for products labeled HD when the D is not on the package label use 0.95 g/cm³. Also use a similar statement “if the packer or manufacturer does not disclose the density then use 0.95 g/cm³.” The director pointed out that it is not the role of the Conference to address quality issues, but to have a level playing field for inspectors to test a product. Another official remarked that companies need to identify their product on the container, and inspectors will use what density is disclosed.

The Committee received one letter asking for the withdrawal of this proposal and California submitted material safety data sheets from several companies (refer to Appendix B). The Committee considered comments received and agreed that more work was needed so the item was changed to Informational status.

At the 2010 CWMA Interim Meeting, there were no comments heard on this item. The CWMA L&R Committee recommends that this item remain Informational.

At the 2010 WWMA Annual Meeting, a state official commented that 10 companies have filed complaints concerning products being mislabeled, where the density was unknown. A state official submitted new language to replace a portion of language within the item under consideration. Two county officials spoke in support of the amended item, which would assist weights and measures officials in the field. A county official submitted a letter of support. The WWMA L&R Committee recommends that the amended language move forward as a Voting item.

The WWMA L&R Committee also recommends that additional language be inserted for SI dimensions. Amend Section 2.13.4. Declaration of Weight as follows:

For the purpose of this regulation, **when D is not labeled on the package, known**, the minimum density (**D**) used to calculate the target net weight for linear low density polyethylene products (LLPD) and products other than high density (HDPE) shall be 0.92 g/cm³ (when D is not known). For products labeled High Density (HDPE) or similar wording which does not specify the minimum density (D) on the package label, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.

At the 2010 SWMA Annual Meeting held in Columbia, South Carolina, there were no comments heard on this item.

The SWMA L&R Committee would like to seek additional comments from industry, other than material safety data sheets (refer to Appendix A in this report). The SWMA L&R Committee recommends that this item move forward as an Informational item.

At the 2010 NEWMA Interim Meeting held in Norwich, Connecticut they noted that this proposal is confusing and that additional work needs to be done to clarify the impact of the proposed changes on manufacturers and consumers. The NEWMA L&R Committee recommends this move forward as a Developing item.

At the 2011 NCWM Interim Meeting held in Dallas, Texas, Mr. Mike Jackelen, Berry Plastics, stated this item as written will have a detrimental effect on the industry due to the high cost of plastics. Mr. Jackelen further explained that high density plastics are of higher quality but are of a thinner gauge which subjects it to tearing. A state regulator stated the WWMA recommended a change to the language for specifying that only when the density is not known or not labeled then the 0.95 g/cm^3 would apply.

The Committee agreed that adding a requirement which gives the manufacturer the option of providing the actual density of the plastic provides flexibility for industry and will assist weights and measures officials to ensure the accuracy of quantity declarations. The Committee recommends the revised language under consideration from the WWMA move forward as a Voting item.

Warfield, Lisa

From: Jackey Wong [jackey@wardleyfilm.net]
Sent: Monday, June 20, 2011 1:47 PM
To: jpg4@westchestergov.com
Cc: Warfield, Lisa
Subject: Plastic film correction factor proposals
Attachments: scan0001.jpg; scan0002.jpg; scan0003.jpg

Good morning Mr. Gaccione,

This e-mail is to respond the new HDPE film weight conversion factor proposal.

Wardley Ind., Inc. is supporting this new push for a more up to date guide line on the Polyethylene film products and welcome to see a new platform, better environment for a more fair competition. However, their is very common to have a HDPE blending with lower density LLDPE materials to produce a film for better physical property. Therefore, the 0.950g/cm³ may not really represent the true density of HDPE film/bag products in a general situation. In fact, most of the popular film grade HDPE resin in the market is already offer lower than this 0.950g/cm³ figure to begin with. (Please see enclose spec. sheet for your reference). I would like to said the new propose factor is setting on 0.948g/cm³ or lower is much more close to real reality.

Please feel to contact me should you have any questions to this .

Jackey Wong
Wardley Ind., Inc.
907 Stokes Ave., Stockton, Ca 95215
Tel 209 932 1088 , Fax 209 932 0288
www.wardleyfilm.com

Technical Information



DOW HDPE DGDC-2100 NT 7
High Density Polyethylene Resin

Overview

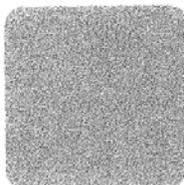
- High Density Polyethylene (HDPE)
- Complies with:
 - U.S. FDA 21 CFR 177.1520 (c) 3.2a
 - Canadian HPFB No Objection
 - EU, 2002/72/EC
 - Consult the regulations for complete details.

DOW DGDC-2100 NT 7 High Density Polyethylene Resin is a high-molecular weight, high-density film grade resin. This product was specifically designed to offer an optimal balance of physical properties and processability. DGDC-2100 NT7 HDPE resin is ideally suited for use in making grocery sacks, consumer and institutional liners, and merchandise bags.

| Physical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--|---------------------------|-------------------------|-------------|
| Density | 0.948 g/cm ³ | 0.948 g/cm ³ | ASTM D792 |
| Melt Index | | | ASTM D1238 |
| 190°C/21.6 kg | 9.0 g/10 min | 9.0 g/10 min | |
| 190°C/2.16 kg | 0.070 g/10 min | 0.070 g/10 min | |
| Films | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Film Thickness - Tested | 0.500 mil | 12.7 µm | |
| Film Puncture Energy (0.500 mil (12.7 µm)) | 7.90 in-lb | 0.893 J | Dow Method |
| Film Puncture Force (0.500 mil (12.7 µm)) | 6.70 lbf | 29.8 N | Dow Method |
| Film Puncture Resistance | | | Dow Method |
| 0.500 mil (12.7 µm) | 128 ft-lb/in ² | 10.6 J/cm ² | |
| Secant Modulus | | | ASTM D882 |
| 2% Secant, MD: 0.500 mil (12.7 µm) | 140000 psi | 966 MPa | |
| 2% Secant, TD: 0.500 mil (12.7 µm) | 159000 psi | 1100 MPa | |
| Tensile Strength | | | ASTM D882 |
| MD: Yield, 0.500 mil (12.7 µm) | 6140 psi | 42.4 MPa | |
| TD: Yield, 0.500 mil (12.7 µm) | 4610 psi | 31.8 MPa | |
| MD: Break, 0.500 mil (12.7 µm) | 13600 psi | 93.4 MPa | |
| TD: Break, 0.500 mil (12.7 µm) | 9990 psi | 68.8 MPa | |
| Tensile Elongation | | | ASTM D882 |
| MD: Break, 0.500 mil (12.7 µm) | 330 % | 330 % | |
| TD: Break, 0.500 mil (12.7 µm) | 410 % | 410 % | |
| Dart Drop Impact (0.500 mil (12.7 µm)) | 350 g | 350 g | ASTM D1709A |
| Elmendorf Tear Strength | | | ASTM D1922 |
| MD: 0.500 mil (12.7 µm) | 11 g | 11 g | |
| TD: 0.500 mil (12.7 µm) | 73 g | 73 g | |
| Thermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Melting Temperature (DSC) | 504 °F | 262 °C | Dow Method |
| Optical | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Gloss (45°, 0.500 mil (12.7 µm)) | 9 | 9 | ASTM D2457 |
| Haze (0.500 mil (12.7 µm)) | 69 % | 69 % | ASTM D1003 |
| Extrusion | Nominal Value (English) | Nominal Value (SI) | |
| Melt Temperature | 410 °F | 210 °C | |

Extrusion Notes

- Fabrication Conditions For Blown Film:
- Screw Size: 1.97 in. (50mm); 24:1 L/D
 - Melt Temperature: 410 °F (210 °C)
 - Output: 8 lb/hr/in. of die circumference
 - Die Diameter: 3.94 in. (100mm)
 - Blow-Up Ratio: 4:1
 - Neck Height: 32 in. (813 mm)



Alathon®
L5005
 High Density Polyethylene
 HMW Film Grade
 Melt Index 0.057 Density 0.949

- Applications** ALATHON L5005 is a high molecular weight high density copolymer that provides broad bimodal molecular weight distribution, high stiffness and good heat seal response and strength. Typical applications include merchandise bags, grocery sacks, trash can liners, produce bags and roll stock.
- Regulatory Status** L5005 meets the requirements of the Food and Drug Administration regulation 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food." Specific limitations or conditions of use may apply. Contact your Equistar sales representative for more information.
- Processing Techniques** Specific recommendations for processing L5005 can only be made when the processing conditions, equipment and end use are known. For further suggestions please contact your Equistar sales representative.

| Typical Properties | Property | Nominal Value | Units | ASTM Test Method |
|--------------------|-----------------------------------|-------------------|------------|------------------|
| | Melt Index | 0.057 | g/10 min | D 1238 |
| | Density | 0.949 | g/cc | D 1505 |
| | Total Energy Dart Drop | 2.05 | ft-lbs/mil | D 4272 |
| | Elmendorf Tear Strength, MD (TD) | 14 (35) | g | D 1922 |
| | Tensile Strength @ Yield, MD (TD) | 3,800 (3,400) | psi | D 882 |
| | Tensile Strength @ Break, MD (TD) | 8,500 (5,000) | psi | D 822 |
| | Elongation @ Break, MD (TD) | 300 (420) | % | D 882 |
| | Secant Modulus, MD (TD) | 115,000 (140,000) | psi | D 882 |

Typical Process Condition Ranges:

BUR=3.5-4.5:1; Neck Height=6-9 Die Diameters; Die Gap [nominal], in.=0.040-0.050;
 Tower Height=Relatively Short; Output, Lb/Hr/In of Die Circumference=10-12;
 Melt Temperature - 390-420°F (199-216°C)

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Formosa Plastics®

Formolene® HDPE

Technical Data Sheet

Formolene E924

Melt Index – 0.04
Density – 0.949

High Molecular Weight High Density Polyethylene (HMW-HDPE) for Film Extrusion

Formolene E924 is a bi-modal HMW-HDPE resin designed for high dart impact strength and good processing characteristics. The resin is well balanced in overall physical properties and provides good stiffness for thin gauge film applications.

Formolene E924 meets all requirements of the U.S. Food and Drug Administration as specified in 21 CFR 177.1520, covering safe use of polyolefin articles intended for direct food contact.

Suggested Applications

T-Shirt Bags
Trash Can Liners

Industrial liners
Heavy Duty Bags

Nominal Physical Properties

| PROPERTY** | TEST METHOD | UNIT | VALUE |
|---|-------------|-----------|--------------|
| Density | D1505 | g/cc | 0.949 |
| Melt Index, Condition E, Condition E, 190°C/2.16 kg (MI) | D1238 | g/10 min. | 0.04 |
| Condition F, 190°C/21.6 kg (HLMI) | D1238 | g/10 min. | 8.50 |
| Melting Point | DSC | °C | 131.0 |
| <u>Typical Film Properties</u> | | | |
| Dart Impact | D1709 | g/mil. | 210 |
| Elmendorf Tear Strength | D1922 | g/mil. | 14/25* |
| Tensile Strength at Break | D882 | psi. | 9,000/4,100* |
| Elongation | D746 | % | 300/410* |

* MD / TD

Note: Film Properties based on 0.50 mil film produced in laboratory conditions at a Blow Up Ratio of 4.0 and a stalk height of 5X the die diameter. Actual film properties may vary depending on operating conditions and additive packages. Film properties are not intended to be used as specifications.

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Any inquiries regarding this data sheet should be addressed to: 9 Peach Tree Hill Road • Livingston, NJ 07039 • Phone: (888) FPCUSA3 • Fax: (973) 716-7230

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