

CONEG

COALITION OF NORTHEASTERN GOVERNORS

Governor Michael S. Dukakis, Chairman
Governor Jim Florio, Vice Chairman
Anne D. Stubbs, Executive Director

May 16, 1990

TO: All Interested Parties:

On behalf of the Council of State Governments' Eastern Regional Conference's Northeast Recycling Council (NERC), and the Source Reduction Council (SRC) of the Coalition of Northeastern Governors, we take great pleasure in announcing the first Northeast Labeling Summit to be held on June 25-26, 1990, from 9:00 am to 5:00 pm, at the Radisson Hotel, 128 Frontage Road, Newark, New Jersey (near the airport). The number for the Radisson Hotel is (201) 690-5500. A preliminary agenda is enclosed.

The regulation of terms, emblems, labels and logos for identifying attributes of products and packaging that relate specifically to their solid waste and/or environmental impact has been recognized as an important policy tool for promoting the production and consumption of those items that minimize such impacts. In the absence of regulation, such terms, emblems, labels and logos may have been misused.

A growing number of States and non-governmental entities are exploring the development of standards and promotional efforts for the use of such emblems and terms. Given the diversity of attention now being paid to the issue, it is vital that the actions of those various states and entities be coordinated to develop a unified approach in the design of and standards for applying such emblems and terms.

Toward that end, NERC and the SRC are convening a meeting for the purpose of soliciting input into the development of the enclosed draft emblem regulation that were drafted by a working group comprised of NERC and SRC members. The draft regulation establishes standards for the use of emblems and terms identifying the following package and product attributes:

- contribution to source reduction;
- reusability;
- recyclability; and,
- recycled content.

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**COUNCIL OF STATE GOVERNMENTS
Eastern Regional Conference**

**NORTHEAST RECYCLING COUNCIL
AND
SOURCE REDUCTION COUNCIL
COALITION OF NORTHEASTERN GOVERNORS**

June 25-26, 1990

**Radisson Hotel
128 Frontage Road
Newark, New Jersey**

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MONDAY, JUNE 25, 1990

9:30 AM - 5:00 PM	INFORMATIONAL HEARING ON MODEL EMBLEM REGULATIONS
6:30 PM - 10:00 PM	NERC Business Meeting and SRC Labeling Subcommittee Meeting (tentative)

TUESDAY, JUNE 26, 1990

9:00 AM - 5:00 PM	DEVELOPMENT OF A NERC/SRC AGENDA:
	1) Further refine the draft model standards for the design and use of terms and emblems identifying the following package and product attributes:
	- contribution to source reduction; - reusability; - recyclability; and - recycled content.
	2) Develop a consensus method for administering application of proposed terms and emblems. Items for discussion include but are not limited to:
	- data/information requirements, burden of proof and certification - State by state or single state implementation or single registry

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COUNCIL OF STATE GOVERNMENTS
Eastern Regional Conference

NORTHEAST RECYCLING COUNCIL

June 25 - 26, 1990

Radisson Hotel
128 Frontage Road (Newark Airport)
Newark, New Jersey
201-690-5500

CONFERENCE REGISTRATION / HOTEL RESERVATION FORM

Name _____

Title _____

Agency _____

Address _____

City, State, Zip _____

Daytime Phone (_____) _____

CONFERENCE REGISTRATION FEES:
\$50 per day, single day registration
\$90 for both days

I **DO NOT** require hotel reservations _____

I do **REQUIRE** hotel reservations for the evenings of Sun. 6/24 _____ Mon. 6/25 _____

_____ SINGLE (\$85) _____ DOUBLE (\$85) (limited availability)

Date and time of arrival _____ departure _____

The Radisson Hotel must have a credit card number to hold the room reservation.
Indicate below:

Credit Card: American Express _____ MasterCard _____ Visa _____ Other _____

Number _____ Exp. Date _____

THIS FORM MUST BE RETURNED NO LATER THAN JUNE 11 TO:

COUNCIL OF STATE GOVERNMENTS
270 Broadway, Suite 513
New York, New York 10007
(212) 693-0400
fax: (212) 227-5260

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NOTICE OF COMMENT OPPORTUNITY

COUNCIL OF STATE GOVERNMENTS'
NORTHEAST RECYCLING COUNCIL

SOURCE REDUCTION COUNCIL
COALITION OF N.E. GOVERNORS

SUBJECT: *Model State Recycling Emblem Regulations*

PURPOSE: To Receive Written and Oral Testimony Examining the Implications of Model State Emblem Regulations as Drafted.

TIME/DATE: JUNE 25-26, 1990

PLACE: RADISSON HOTEL, 128 Frontage Road, Newark, New Jersey
(near the airport), 201-690-5500

The Council of State Governments' Northeast Recycling Council (NERC), and the Source Reduction Council of Coalition of Northeastern Governors (SRC) are holding an informal joint hearing to receive comments and written testimony on a draft of proposed model recycling emblem regulations. The model regulations would apply to anyone who uses or wishes to use a recycling emblem or the terms "reusable," "recyclable," "recycled" or "recycled content" on their package or product. The document also anticipates regulating terms and emblems used to indicate that a package or product has been source-reduced.

States have a dual interest in regulating the use of recycling emblems and terms: first, as a consumer protection measure, to guard against the misapplication and false advertisement of terms such as "recyclable," on products and packages in the marketplace; second, as a means of developing "environmental shopping," leading to less waste and better markets for secondary materials. States want to encourage manufacturers of packaging and products that meet defined standards for "reusable," "recyclable," and/or "recycled" or "recycled content" to apply those recycling emblems to their materials, and promote the environmental soundness of those materials in the marketplace.

Based in part on draft regulations developed by the New York State Department of Environmental Conservation, the attached draft was prepared by members of NERC and SRC. It should be noted that a number of controversial issues were identified in the joint NERC-SRC labeling discussions. Therefore, while consensus was reached on much of the model regulation, the joint working group has not yet reached agreement on several issues, and is particularly interested in receiving comments on those issues, which are highlighted with an asterisk (*).

Below please find the list of questions toward which the working group would like interested parties to direct their written or oral comments.

1. OBJECTIVES FOR A VOLUNTARY LABELING PROGRAM. *What are the priority objectives of a regulated labeling program: to motivate business and industry to do the "right" thing by reducing their packaging, taking out toxics, setting up recycling systems, using recycled materials, etc? To shift consumer purchases toward packages and products that meet established standards for source reduction, reusability, recyclability or recycled content? To prevent misleading or inaccurate advertising claims? In order of importance, how should the priority objectives be ranked?*

2. DEFINITION OF "SOURCE REDUCTION." *Is the definition satisfactory? What term or terms should be captured by these regulations, i.e., what would a manufacturer be likely to put on a package/product to convey that it is source reduced? What is the relevant basis of comparison (see page ten of the draft regulations) when measuring source reduction?*

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PROPOSED RECYCLING EMBLEM MODEL REGULATION

SECTION

- 1 - Purpose and applicability**
- 2 - Definitions**
- 3 - Emblem illustrations**
- 4 - Standards for emblems and terms**
- 5 - Provisions for use of emblems and terms**
- 6 - Severability**
- 7 - State Specific Enforcement and Penalties**

SECTION 1. Purpose and applicability

- (a) Purpose.** The purpose of this Regulation is to establish official recycling emblems and establish standards to be applied for the use of recycling emblems and the terms source reduction, reusable, recyclable, recycled content, and recycled.
- (b) Applicability.** This Regulation applies to:
 - (1)** any person who wishes to use an emblem and/or term defined in this Regulation on a material, or in the promotion or advertisement of a material, which is sold or offered for sale in this State; and/or,
 - (2)** any person who uses the emblem and/or terms "source reduction," "reusable," "recyclable," "recycled content," or "recycled," directly on or in the promotion or advertisement of a material which is sold or offered for sale in this State to indicate or imply to a purchaser the meaning which has been defined for those terms in Section 2 or, that the material conforms with the standards established in this Regulation.

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- (16) ferrous metal - excluding food and beverage containers:
 - (17) aluminum food and beverage containers;
 - (18) aluminum - excluding food and beverage containers:
 - (19) copper; and
 - (20) lead acid batteries.
- (e) "Package" means a container providing a means of marketing, protecting or handling a product and shall include a unit package, an intermediate package and a shipping container as defined in ASTM D9996. "Package" shall also mean and include such unsealed receptacles as carrying cases, crates, cups, pails, rigid, foil and other trays, wrappers and wrapping films, bags and tubs.
- (f) "Person" means any individual, public or private corporation, political subdivision, government agency, authority, (state authority) or bureau of the State, municipality, industry, co-partnership, association, firm, trust, estate, or any other legal entity whatsoever.
- (g) "Post-consumer material" means only those products or materials generated by a business or consumer which have served their intended end uses, and which have been separated or diverted from solid wastes for the purposes of collection, recycling and disposition."
- (h) "Pre-consumer material" means material and by-products which have not reached a consumer for an intended end use and have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

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- (o) "Secondary material" or "Recovered material" means material recovered from or otherwise destined for the solid waste stream, including but not limited to, post-consumer material, industrial scrap material and overstock or obsolete inventories from distributors, wholesalers and other companies, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process. For paper and paper products, "secondary material" shall mean "Recovered Paper Material."
- (p) "Source Reduction" means the elimination of packaging or reduction of the weight, volume, and/or toxicity of packaging.
- (q) "Term" means "source reduction", "reusable", "recyclable", "recycled", or "recycled content", or any combination or derivation thereof.

SECTION 3. Emblem illustration

NOT AVAILABLE AT THIS TIME

SECTION 4. Standards for emblems and/or terms

- (a) Source Reduction emblem and/or terms.

(Attached please find the preliminary work and questions that we are addressing.)

- (b) Reusable emblem and/or terms.

Use of the reusable emblem or term will not be granted unless the original package or material is used or refilled a minimum of 5 times in a program established by a manufacturer, distributor, or retailer.

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RECYCLED CONTENT STANDARDS

Material	Standard for Minimum Percentage by Weight of Secondary Material Content	Standard for Minimum Percentage by Weight of Post-Consumer Material Content
1. Paper Products:		
(i) Newsprint	50 percent	40 percent
(ii) High Grade/Office Paper	50 percent	**
(iii) Tissue	50 percent	20 percent
(iv) Other	50 percent	20 percent
2. Paper Packaging:		
(i) Paperboard and other paper packaging	50 percent	35 percent
(ii) Fiber boxes	50 percent	35 percent
3. Aluminum		
(i) Products	50 percent	15 percent
(ii) Packages		
Rigid	50 percent	15 percent
Flexible	50 percent	15 percent
4. Steel		
(i) Products	50 percent	15 percent
(ii) Packages	50 percent	15 percent
5. Other Metals		
(i) Products	50 percent	15 percent
(ii) Packages	50 percent	15 percent
6. Plastics		
(i) Products	50 percent	15 percent
(ii) Packages		
Rigid	35 percent	15 percent
Flexible	35 percent	15 percent
7. Glass		
(i) Products	50 percent	35 percent
(ii) Packages	50 percent	35 percent
8. Solvents	50 percent	50 percent
9. Lubricating Oils	50 percent	25 percent
10. Rubber Products	50 percent	25 percent
11. Other		
(i) Products	50 percent	50 percent
(ii) Packages	50 percent	50 percent
12. Multi-Material	*	*

*Each material component of the package or product must meet the recycled content standards for that material as described in this section.

**Maximum available post-consumer content is encouraged.

SECTION 6. Severability

If any provision of this Regulation or its application to any person or circumstance is held invalid, the remainder of this Regulation, and the application of those provisions to persons or circumstances other than those to which it is held invalid, shall not be affected thereby.

SECTION 7. State specific enforcement and penalties

SECTION 8. State Review

(a) Recyclable Standards.

By January 1, 1994 and January 1, 1999, the administering agency shall make a determination in consultation with the Northeast Recycling Council (NERC), the Source Reduction Council of Coalition of Northeast Governors' (SRC), and other states, as to the appropriateness of the recyclable standards established in section 4 of these regulations, including an assessment of their achievability and the need for their readjustment.

(b) Recycled or Recycled Content Standards.

By January 1, 1994 and January 1, 1999, the administering agency shall make a determination in consultation with NERC, SRC, and other states, as to the appropriateness of the recycled content standards established in Section 4 of these regulations, including an assessment of their achievability and the need for their readjustment.

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Department of Environmental Management
83 Park Street
Providence, RI 02903-1037
(401) 277-3434

To: The Regulated Community and the General Public

Re: Draft Recycling Emblem Regulations
Schedule for Public Hearing and Written Comment Period

Date: April 23, 1990

The Director of the Rhode Island Department of Environmental Management has under the consideration proposed rules and regulations setting requirements to be met for display of recycling emblems on recyclable, recycled and reusable materials and products, pursuant to Chapter 23-18.8.3 of the General Laws of Rhode Island, 1956 as amended. The Director of the Department of Environmental Management will hold a public hearing on the above mentioned manner in the Health Department Auditorium, Cannon Building, 75 Davis Street, Providence, RI on May 15, 1990 at 10:00 am. Written comment on the draft regulations will be received until 4:00 pm (local prevailing time), May 31, 1990

The proposed rules and regulations establish official recycling emblems and establish standards to be applied for the voluntary use of recycling emblems and the terms recycled, recyclable and reusable. The proposed rules and regulations will allow manufacturers to identify and consumers to recognize recyclable, recycled and reusable products and materials according to accepted definitions of these terms. The regulations establish an authorization process for manufacturers wishing to use the emblems on products and materials sold in the state of Rhode Island.

We welcome your participation and comments on these draft regulations.

Sincerely,

Victor A. Bell
Chief

DEM/Office of Environmental Coordination

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Attachment:

Draft Rhode Island Recycling Emblem Regulations

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Recycling Emblem Regulations
Rhode Island Department of Environmental Management
Office of Environmental Coordination
83 Park Street, Fifth floor
Providence, RI 02903-1037
(401) 277-3434

April 17, 1990

SECTION

- 1 - Authority
- 2 - Purpose and applicability
- 3 - Definitions
- 4 - Emblem illustrations
- 5 - Standards for emblems and terms
- 6 - Provisions for use of emblems and terms
- 7 - Enforcement and Penalties
- 8 - Authorization Process
- 9 - Construction
- 10 - Severability

SECTION 1. Authority

These regulations are adopted pursuant to Section 23-18.8-3 of the General Laws of Rhode Island as amended.

SECTION 2. Purpose and applicability.

- (a) Purpose. The purpose of this Regulation is to establish official recycling emblems and establish standards to be applied to the use of recycling emblems and the terms

recycled, recyclable and reusable.

(b) Applicability. This Regulation applies to:

- (1) any person who wishes to use an emblem and/or term defined in this Regulation on a material, or in the promotion or advertisement of a material, which is sold or offered for sale in this State; and/or,
- (2) any person who uses the emblem and/or terms "recycled," "recyclable" or "reusable" directly on or in the promotion or advertisement of a material which is sold or offered for sale in this State to indicate or imply to a purchaser the meaning which has been defined for those terms in Section 3, or that the material conforms with the standards established in this Regulation.

SECTION 3. Definitions.

Except as the context indicates otherwise, the following terms have the following meanings when used in this Regulation:

(a) Aluminum industry terms:

- (1) "Primary aluminum industry" means the industry producing a material made from virgin aluminum and "new scrap" aluminum and/or aluminum beverage containers.
- (2) "Secondary aluminum industry" means the industry producing products made from "new scrap" and

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aluminum recovered as a secondary material.

- (3) "New scrap" aluminum is waste generated from the production of mill, wrought, and cast products.
- (b) "Container" means a package, vessel, covering, wrapping, box or device in which material or product is protected, stored, treated, handled or transported.
- (c) "Department" means the Rhode Island Department of Environmental Management
- (d) "Emblem" or "recycling emblem" means:
 - (1) an emblem illustrated in Section 4 of this regulation or a facsimile thereof; and,
 - (2) the terms "recycled," "recyclable," or "reusable," or any combination or derivation thereof.
- (e) "Material" means any item, product, container, or packaging to wrap or hold a product, made for purchase or use by a person.
- (f) Oil industry terms:
 - (1) "Lube Stock" means the base petroleum fraction that is used to formulate lubricating oil.
 - (2) "Lubricating Oil" means all oil that is suitable for use as lubricant or is sold for use as a lubricant.
 - (3) "Re-refined Oil" means oil that has undergone any process, method or technique that removes the physical and chemical contaminants from waste oil so that such oil is suitable for use as lube stock and,

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when used by itself or when mixed with new oil or additives, is substantially equivalent or superior to new oil intended for the same purpose. Lube stock shall meet the standards specified in the American Petroleum Institute's engine service classifications.

- (4) "Used Engine Lubricating Oil" means petroleum - based lubricating oil from internal combustion engines that through use has been contaminated by physical or chemical impurities.
- (5) "Waste Oil" means used engine lubricating oil and any other oil, including but not limited to motor oil, gear oil, and cutting oil, that has been contaminated by physical or chemical impurities, through use or accident, and has not subsequently been re-refined.
- (g) "Person" means any individual, public or private corporation, political subdivision, government agency, authority, department or bureau of the State, municipality, industry, co-partnership, association, firm, trust, estate, or any other legal entity whatsoever.
- (h) "Post-consumer material" means only those products or materials generated by a business or consumer which have served their intended end uses, and which have been separated or diverted from solid wastes for the purposes of collection, recycling and disposition."
- (i) "Pre-consumer material" means material and by-products

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which have not reached a consumer for an intended end use and have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

- (j) "Recovered paper material" means paper waste generated after the completion of a papermaking process, such as post-consumer materials, envelope cuttings, bindery trimmings, printing waste, cutting and other converting waste, butt rolls and mill wrappers, obsolete inventories, and rejected unused stock. Recovered paper material, however, shall not include fibrous waste generated during the manufacturing process such as fibers recovered from waste water or trimmings of paper machine rolls (mill broke), or fibrous by-products of harvesting, extractive or woodcutting processes, or forest residues such as bark.
- (k) "Recyclable" means any material listed as a recyclable in the Rhode Island commercial or municipal recycling regulations or the Rhode Island Battery Deposit and Control Regulations, or oil subject to the hard-to-dispose-of tax as stated in Chapter 37-15.1 of the Rhode Island General Law; the Hard-to-Dispose-of Material - Control and Recycling Act.
- (l) "Recycled" means a material containing a specified minimum percentage by weight of secondary materials content and

minimum percentage by weight of post-consumer material as established by the New York State Department of Environmental Conservation. The percentage of secondary material content shall be that portion of a material or product weight that is composed of secondary material as demonstrated by an annual mass balance of all feedstocks and outputs of the manufacturing process.

- (m) "Recycling Rate" means that percentage by weight of a given material sold or distributed for sale in the State that would otherwise be destined for the solid waste stream, including post-consumer and pre-consumer material that is collected or otherwise returned and is processed or refabricated into marketable end products other than fuels for producing heat or power by burning.
- (n) "Reusable" means that the original product can be returned for refilling or reuse repeatedly in a program established by a manufacturer or distributor for reuse of the manufactured product.
- (o) "Secondary material" or "Recovered material" means material recovered from or otherwise destined for the solid waste stream, including but not limited to, post-consumer material, industrial scrap material and overstock or obsolete inventories from distributors, wholesalers and other companies, but such term does not include those materials and by-products generated from, and commonly

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reused within, an original manufacturing process. For paper and paper products, "secondary material" shall mean "Recovered Paper Material."

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SECTION 4. Emblem illustration

- (a) The recycled emblem is illustrated in Appendix A.
- (b) The recyclable emblem is illustrated in Appendix B.
- (c) The reusable emblem is illustrated in Appendix C.

SECTION 5. Standards for emblems and/or terms.

- (a) Recycled emblem.

Use of the recycled emblem will not be allowed unless the material meets the following standard for recycled content:

RECYCLED CONTENT STANDARDS

Material	Standard for Minimum Percentage by Weight of Secondary Material Content	Standard for Minimum Percentage by Weight of Postconsumer Material Content
1. Building Insulation:		
(i) Cellulose loose-fill and spray on	75 percent	75 percent
(ii) Rock wool	50 percent	**
2. Paper and Paper Products:		
(i) Newsprint	40 percent	40 percent
(ii) High grade bleached printing and writing papers:		
Offset printing	50 percent	**
Mimeo & duplicator paper	50 percent	**
Writing (stationery)	50 percent	**
Office paper		
(i.e., note pads)	50 percent	**
Envelopes	50 percent	**
Book paper	50 percent	**
Bond paper	50 percent	**
Ledger	50 percent	**
Cover stock	50 percent	**
Cotton fiber paper	50 percent*	**
(iii) Tissue products:		
Toilet tissue	80 percent	20 percent
Paper towels	80 percent	40 percent
Paper napkins	80 percent	30 percent
Facial tissue	80 percent	5 percent
Doilies	80 percent	40 percent

*No more than 25 percent pre-consumer textile fiber.

**Maximum available post-consumer content is encouraged.

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	Standard for Minimum Percentage by Weight of Secondary Material Content	Standard for Minimum Percentage by Weight of Postconsumer Material Content
(iv) Unbleached packaging:		
Corrugated boxes	80 percent	35 percent
Fiber boxes	80 percent	35 percent
(v) Recycled paperboard:		
Recycled paper board		
products including		
folding cartons	90 percent	80 percent
Pad backing	90 percent	90 percent
3. Lubricating Oils	25 percent	25 percent
4. Steel		
(i) Major Integrated	25 percent	15 percent
Steel Mills		
(Basic Oxygen Process Furnace)		
(ii) Mini Mills	75 percent	15 percent
(Electric Arc Furnace)		
5. Aluminum		
(i) From the primary		
aluminum industry	25 percent	15 percent
(ii) From the secondary		
aluminum industry	85 percent	15 percent
6. Copper	50 percent	50 percent
7. Plastics	25 percent	15 percent
8. Glass	35 percent	35 percent
9. Solvents	75 percent	75 percent

(b) Recyclable emblem or term.

Use of the recyclable emblem or term will not be allowed unless:

(1) the material is recyclable; and, (2) the material to which the emblem or term pertains can be used in its entirety, excluding labels, stickers, adhesives and closures, as a feedstock at the beginning of a manufacturing process.

(c) Reusable emblem or term.

Use of the reusable emblem or term will not be granted unless the material or container subsequent to cleaning if appropriate, will be reused or refilled repeatedly in a program developed and implemented by the manufacturer or distributor.

SECTION 6. Provision for use of emblem and terms.

(a) Use. Use of an emblem or term defined in this Regulation is voluntary.

(b) Prohibition. After one year from the effective date of this regulation:

(1) No person shall sell or offer for sale in this State any material having on it an emblem or term as defined in this Regulation indicating that the material upon which it is placed or to which it refers is recycled, recyclable or reusable unless

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authorized under provisions of this regulation;

(2) Except as provided elsewhere in this Regulation, no person shall place an emblem or term on a product or material unless authorized under the provisions of this regulation;

(3) Except as provided elsewhere in this Regulation, no person shall use an emblem in conjunction with any symbol, terms or text for the promotion or advertisement of a material unless authorized under the provisions of this regulation.

(c) Exemption. A code, which utilizes numbers or letters and is not intended for, nor construed as, advertising or promoting the recyclability, reusability or recycled content of a material or product to potential consumers and which appears only on the bottom or underside of a rigid container, is exempt from this Regulation.

SECTION 7. Enforcement and penalties.

1. Use of the recycling emblem on any item not listed as a recyclable in the commercial or municipal regulations and not receiving authorization from the department as a reusable product or one containing recycled content as defined in Section 5 constitutes unauthorized use of the symbol. Unauthorized use of, or use of the recycling emblem contrary to these regulations shall constitute a deceptive trade practice within the meaning

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of Rhode Island General Law Section 6-13.1-1, and such violations shall be punishable and actionable as provided for by chapter 13.1 of Title 6 of the Rhode Island General Law.

2. No person shall use the recycled or reusable emblem in conjunction with any symbol or text without prior written authorization from the department.

3. Authorization for the use of the recycled or reusable emblem or term may only be granted by the Director of the Department of Environmental Management or his authorized representative.

SECTION 8. Authorization Process

Requests for use of the recycled or reusable emblem or term in RI must be made by letter addressed to:

Recycling Emblem
Ocean State Cleanup and Recycling Program
Department of Environmental Management
83 Park Street
Providence, RI 02903-1037

The letter must describe the intended use of the emblem and must contain a certification that the material that will be displaying the emblem meet the applicable standards for use of the recycling emblem in Rhode Island as set forth in Section 5. The certification, accompanied by evidence of authority, must be made by a responsible party as follows:

(a) in the case of corporations, by a duly authorized principal executive office;

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- (b) in the case of a partnership or limited partnership, by a general partner;
- (c) in the case of a joint venture, by a joint venture principal.

Within 60 days after receipt of a request for authorization to use an emblem, the department will make a determination whether to authorize that use and will notify in writing, the person requesting the authorized use of its determination.

The following policies regarding authorization will apply.

- a. Use of an emblem on products made of more than one material will not be authorized unless the certification describes each material and the standard being met.
- b. For those cases where standards have not been set forth in Section 5, the department will evaluate the request to use the emblem and make a determination.
- c. If authorization is granted to use the recycling emblem, the department will provide a sample of the symbol to be used.
- d. If the emblem is to be used on a recycled product, the authorized user of the emblem may label the percentage of secondary material content on or adjacent to the emblem. If the percentage of secondary material content is labeled on the emblem, it must not obscure the emblem.

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e. Authorization will be granted for a maximum period of five years and a request to renew authorization, which must contain all the information identified in paragraph one of Section 8, must be made at least 120 days before expiration of this period for continued authorization of use of the recycling emblem. However, within 90 days of any revision to section 5 that will result in increased recycled content for the material that person employs, each person who uses the recycling emblem on such material must request in writing department authorization for continued use of the emblem. No person shall continue use of the recycling emblem beyond such 90 day period unless that person requested continued use within that 90 day period. The department will process the request in accordance with paragraph one of this section and will employ the revised standard in determining whether continued use of the emblem will be authorized.

The department may deny authorization to use the emblem or may revoke an earlier authorization if it determines that emblem's use does not meet, or no longer meets, the requirement of these regulations for authorized uses in effect at the time of determination. If authorization is denied, the person may resubmit another request without prejudice. The department will deny any request for authorization submitted by a person whose authorization to use the emblem has been revoked for a period of one year following the date the revocation was final.

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SECTION 9. Construction

a. These regulations shall be liberally construed to permit the department to effectuate the purposes of the state law.

b. These regulations shall be construed in harmony with and as a supplement to all regulations promulgated by the department pursuant to Sections 23-18.8, 23-18.9, 23-19 and 42-11.

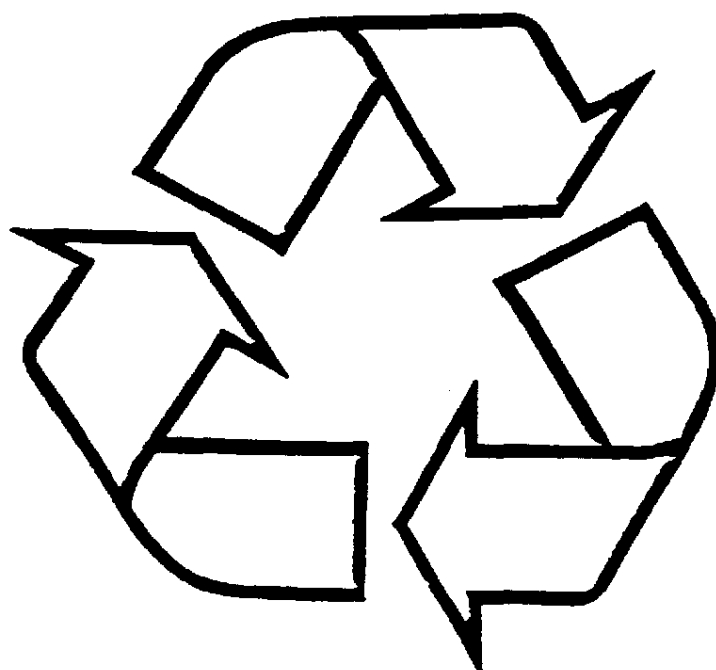
SECTION 10. Severability.

If any provision of these Rules or Regulations or the application thereof to any person or circumstance is held invalid by a court of competent jurisdiction, the remainder of the Rules and Regulations shall not be affected thereby. The invalidity of any section or sections or parts of any section or sections shall not affect the validity of the remainder of these Rules and Regulations.

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Appendix A

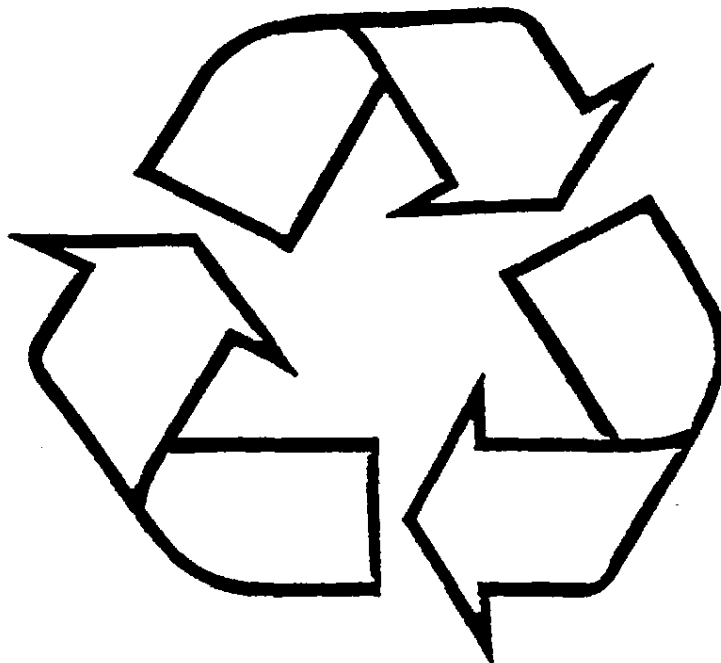


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Appendix B

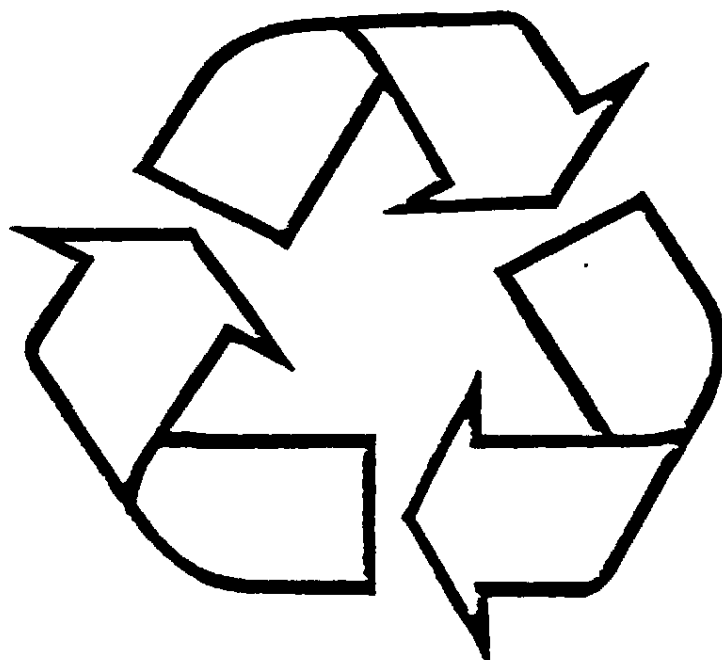
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RECYCLABLE

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Appendix C



REUSABLE

NEW YORK STATE RECYCLING EMBLEM PROPOSALS

6 NYCRR PART 368

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RECYCLING EMBLEMS

(Statutory authority: Environmental Conservation
Law, Sections 1-0101, 3-0301, 8-0113, and 27-0717)

Section 368.1 Purpose and applicability.

368.2 Definitions.

368.3 New York State emblems.

368.4 Standards for emblems.

368.5 Provisions for use of emblems.

368.6 Severability.

Section 368.1 Purpose and applicability.

(a) Purpose. The purpose of this Part is to establish official New York State recycling emblems and establish standards for the use of all emblems. This Part also establishes procedures for petitioning the department for authorization to use an emblem.

Since requests under this Part are not for permits to construct or to operate a solid waste management facility, review of requests for authorization to use an emblem are not subject to Part 621 of this Title. However, the procedures relating to revocation of permits as provided under Part 621 of this Title will apply to revocation of authorizations as provided under this Part.

(b) Applicability. This Part applies to any person who wishes to use or is using an emblem on a material sold or offered for sale in this State.

Section 368.2 Definitions.

Except as the context indicates otherwise, the following terms have the following meanings when used in this Part:

(a) Terms pertaining to the aluminum industry only:

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(1) "Primary aluminum industry" means the industry producing a material made from virgin aluminum and "new scrap" aluminum and/or aluminum beverage containers.

(2) "Secondary aluminum industry" means the industry producing products made from "new scrap" and aluminum recovered as a secondary material.

(3) "New scrap" aluminum is waste generated from the production of mill, wrought, and cast products.

(b) "Container" means a vessel, package, covering, wrapping, box or device in which a material or product is protected, stored, treated, handled or transported.

(c) "Emblem" or "recycling emblem" means any symbol indicating "recycled", "recyclable", or reusable" or combination thereof.

(d) "Material" means any item, container, or product made for use by a person.

(e) "New York State emblem" means an emblem identified in section 368.3 of this Part.

(f) "Person" means any individual, consumer, public or private corporation, political subdivision, government agency, authority, department or bureau of the State, municipality, industry, partnership, association, firm, trust, estate, or any other legal entity whatsoever.

(g) "Recyclable" means a material for which technologies or systems for reuse as a secondary material exist. Such technologies or systems must be demonstrated as available in the separation, collection and aggregation of secondary materials for processing into new materials that are generally accepted, marketed and purchased.

(h) "Recycled" means a material or product containing a specified minimum percentage by weight of secondary materials content as described in Section 368.4(a).

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(i) "Reusable" means that the original product can be repeatedly returned for refilling or reuse.

(j) "Secondary material" means material recovered from or otherwise destined for the solid waste stream, including but not limited to, post-consumer material, industrial scrap material and overstock or obsolete inventories from distributors, wholesalers and other companies, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(k) "Waste paper" means paper materials recovered as post-consumer materials (newspapers, paperboard, etc.) and paper manufacturing wastes (cuttings, trimmings, unused stock, etc.).

Section 368.3 New York State emblems.

(a) The New York State recycled emblem is illustrated in Appendix A.

(b) The New York State recyclable emblem is illustrated in Appendix B.

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(c) The New York State reusable emblem is illustrated in Appendix C.

Section 368.4 Standards for emblems.

(a) New York State recycled emblem.

The department recommends that industry use secondary material feedstocks to the maximum feasible extent in the manufacture of materials. Authorization to use the New York State recycled emblem will not be given unless the following standard, pertaining to minimum percentage by weight of secondary materials content (or, in the case of paper and paper products, waste paper content) of a material to which the emblem relates, is satisfied:

<u>Material</u>	<u>Specified Minimum Percentage by weight of secondary material's content</u>
(1) Building Insulation:	
(1) Cellulose loose-fill and spray on	75 percent

(ii)	Perlite composite board	23 percent
(iii)	Plastic rigid foam, polyisocyanurate/polyurethane:	
	Rigid foam	10 percent
	Foam in place	10 percent
	Glass fiber reinforced	10 percent
(iv)	Phenolic rigid foam	10 percent
(v)	Rock wool	50 percent
(2)	Paper and Paper Products:	
(1)	Newsprint	40 percent
(ii)	High grade bleached printing and writing papers:	
	Offset printing	50 percent
	Mimeo and duplicator paper	50 percent
	Writing (stationery)	50 percent
	Office paper (<u>e.g.</u> , note pads)	50 percent
	Envelopes	50 percent
	Book paper	50 percent

Bond paper	60 percent
Ledger	60 percent
Cover stock	60 percent
Cotton fiber paper	25 percent*

(* includes fiber material recovered from the textile industry)

(iii) Tissue products:

Toilet tissue	20 percent
Paper towels	40 percent
Paper napkins	30 percent
Facial tissue	10 percent
Doilies	40 percent

(iv) Unbleached packaging:

Corrugated boxes	35 percent
Fiber boxes	35 percent
Brown paper (<u>s.g.</u> , bags)	10 percent

(v) Recycled paperboard:

Recycled paper board products

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	including folding cartons	80 percent
	Pad backing	90 percent
(3)	Cement	
	(1) Cement Mix	10 percent
	(11) Mortar Mix	10 percent
(4)	Lubricating Oils	25 percent
(5)	Steel	
	(1) Major Integrated Steel Mills	25 percent
	(Basic Oxygen Process Furnace)	
	(11) Mini Mills (Electric Arc Furnace)	75 percent
(6)	Aluminum	
	(1) From the primary aluminum industry	25 percent
	(11) From the secondary aluminum industry	85 percent
(7)	Copper	50 percent
(8)	Plastics	25 percent
(9)	Glass	25 percent
(10)	Solvents	75 percent

Authorization may be given by the department for materials containing secondary material content not listed in this subdivision.

(b) New York State recyclable emblem.

Authorization to use the New York State recyclable emblem will not be granted unless the material to which the emblem pertains is 100 percent recyclable.

(c) New York State reusable emblem.

Authorization to use the New York State reusable emblem will not be granted unless the product or container has the ability, subsequent to cleaning, to be reused or refilled repeatedly. Authorization to use the New York State reusable emblem will be granted only for a product or container.

(d) Plastics symbol. If a New York State emblem is used, all plastic containers must also display an identification of their resin composition by using the following symbol where x indicates the correct number and y indicates the corresponding

letters pertaining to the resin composition of the plastic. The three arrow portion of the plastics symbol must not be used in the absence of the New York State emblem.

The following list constitutes the number and letters to be used for all plastic materials.

<u>Resin Type</u>	<u>Number (x)</u>	<u>Letter (y)</u>
Polyethylene Terephthalate	1	PETE
High Density Polyethylene	2	HDPE
Vinyl	3	V
Low Density Polyethylene	4	LDPE
Polypropylene	5	PP
Polystyrene	6	PS
Other	7	OTHER

The symbol shall be a minimum size of one half inch and shall be separated from the New York State emblem by no more than one inch unless it is located on the bottom of the product. The symbol will be embossed or imprinted on or at the bottom of the product.

Section 368.5 Provisions for use of emblems.

(a) General authorization. An emblem may be used for the following purposes without having first received written approval from the department for such use: promotion to increase public awareness of an emblem and its significance and to encourage consumers to purchase materials showing an emblem; and promotion of a material to which the emblem pertains after department has authorized the use of the emblem on or for that material.

(b) Prohibition. While a person is not required to use an emblem on any material,

(1) No person shall sell or offer for sale in this state any material having on it any emblem indicating that the material upon which it is placed or to which it refers is

recycled, recyclable, or reusable unless that emblem is authorized under the provisions of this Part.

(2) Except as provided in subdivision (a) of this section, no person shall use an emblem without prior written authorization from the department.

(3) Except as provided in subdivision (a) of this section, no person shall use an emblem in conjunction with any symbol or text without prior written authorization from the department.

(c) Except as provided in subdivision (a) of this section, authorization for the use of an emblem may only be granted by the Commissioner or his authorized representative.

(f) Requests for use of an emblem must be made by letter addressed to:

New York State Recycling Emblems

Bureau of Waste Reduction and Recycling

Division of Solid Waste

VVV 000013165

New York State Department of Environmental

Conservation

50 Wolf Road

Albany, NY 12233-4015

The letter must describe the intended use of the emblem and must contain a certification that the material that will be displaying the emblem meets the applicable standards for use of a New York State emblem set forth in section 368.4 of this Part. The certification, accompanied by evidence of authority, must be made by a responsible party as follows:

(i) in the case of corporations, by a duly authorized principal executive officer;

(ii) in the case of a partnership or limited partnership, by a general partner;

(iii) in the case of a sole proprietorship, by the proprietor; or

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(iv) in the case of a joint venture, by a joint venture principal.

(2) Within 60 days after receipt of a request for authorization to use an emblem, the department will make a determination whether to authorize that use and will notify in writing, the person requesting the authorized use of its determination.

(i) Use of an emblem on products made of more than one material will not be authorized unless the certification describes each material and the standard being met.

(ii) For those cases where standards have not been set forth in section 368.4 of this Part, the department will evaluate the request to use the emblem and make a determination.

(iii) If authorization is granted to use a New York State emblem, the department will provide a sample of the New York State emblem to be used. The authorized user of the recycled emblem may label the percentage of secondary material

content on or adjacent to the emblem. If the percentage of secondary material content is labeled on the emblem, it must not obscure the emblem. Authorization will be granted for a maximum period of five years and a request to renew authorization, which must contain all the information identified in paragraph one of this subdivision, must be made at least 120 days before expiration of this period for continued authorization of use of the particular emblem in question. However, within 90 days of any revision to section 368.4 of this Part that will result in increased recycled content for the material that person employs, each person who uses a recycled emblem must request in writing department authorization for continued use of that emblem. No person shall continue use of the recycled emblem beyond such 90 day period unless that person requested continued use within that 90 day period. The department will process the request in accordance with paragraph one of this subdivision and will employ

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the revised standard in determining whether continued use of the emblem will be authorized.

(3) The department may deny authorization to use an emblem or may revoke an earlier authorization if it determines that the emblem's use does not meet, or no longer meets, the requirements of this Part for authorized uses in effect at the time of determination. If authorization is denied, the person may resubmit another request without prejudice. The department will deny any request for authorization submitted by a person whose authorization to use an emblem has been revoked for a period of one year following the date the revocation was final. The procedures relating to revocation are those as provided under Part 621 of this Title pertaining to permits.

(d) Placement of the New York State emblem.

(1) For use on containers the New York State emblem must be placed directly on the container (it may be embossed in the material itself or labeled separately from the label for the

contents). Where the container as distinct from its label consists of multiple parts, each part must meet the standards established under section 368.4 of this Part.

(2) For use in relation to the contents of the container, e.g. recycled oil, the New York State emblem must be placed on the label describing the contents and if possible on the contents itself.

(3) The New York State emblem must be exhibited no smaller than one half inch in size and must be clearly legible.

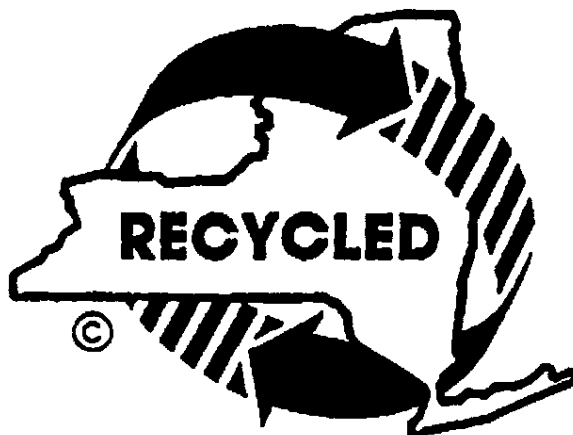
(4) The New York State emblem must be exhibited with colors that stand out against the background color or be black and white.

Section 368.6 Severability.

If any provision of this Part or its application to any person or circumstance is held invalid, the remainder of this Part, and the application of those provisions to persons or circumstances other than those to which it is held invalid, shall not be affected thereby.

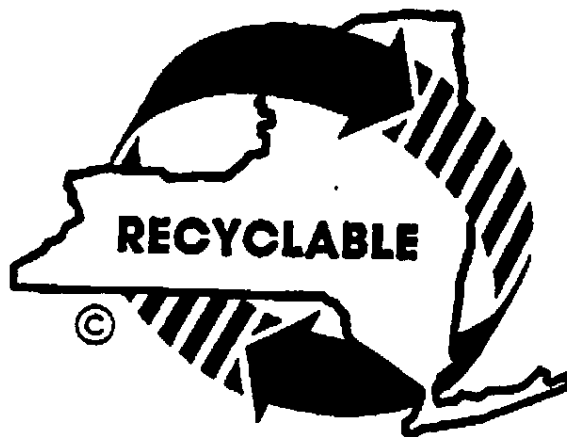
VVV 000013170

APPENDIX A



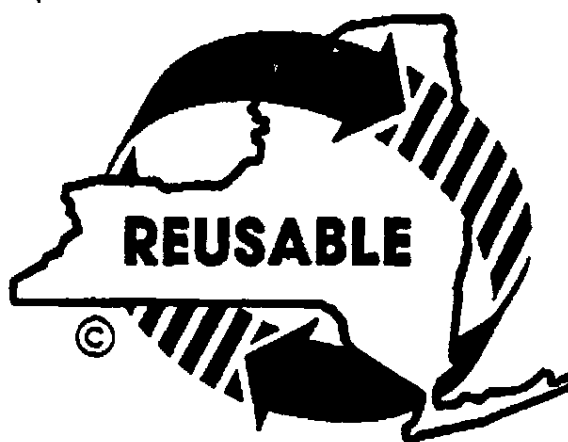
VVV 000013171

APPENDIX B



VVV 000013172

APPENDIX C



VVV 000013173

TO: John Bergman-Velsicol

TGG: JCL: ERT: MJH: AJO: BF
FAX # 708-698-9714

XF: _____

FROM: T. G. Grumbles

DATE: June 12, 1990

SUBJ: ALFOL 810 ALCOHOL SPECIFICATIONS

The 810 ALFOL Alcohol that we are discussing with you is a "tower cut" alcohol, that is, it comes directly from the process with no blending.

The distribution is as follows, based on our standard specifications:

C6OH and lower WT%	1 max	0.4
C8OH, WT%	39-47	45.2
C10OH, WT%	51-59	53.7
C12OH and higher, WT%	1 max	0.7

Please call me at 713-588-3445 with further questions.

TG

T. G. Grumbles

dlj

VVV 000013174

Vista Chemical Company

900 Threadneedle
Houston, Texas 77079
(713) 588-3000

P.O. Box 19029
Houston, Texas 77224
Fax (713) 588-3236

June 12, 1990

TGG: JCL: ERT: MJH: AJO: RF

VISTA

XF: _____

Mr. Eric Lee
UOP
25 East Algonguin Rd.
Des Plaines, Illinois 60017-5017

Dear Eric:

Per our discussion, attached are MSDS's for several Lake Charles plant alkylate products. As we discussed, we do not use the terminology of "rerun tower bottoms". I believe this to be our "whole bottoms" stream which is represented by the MSDS for Vista 160L.

Sincerely,

Tom Grumbles

Thomas G. Grumbles, C.I.H.
Environmental Quality Manager

dlj

Attachment

VVV 000013175

TO: Distribution

TGG: JCL: ERT: MJH: AJO: RF

FROM: T. G. Grumbles

DATE: June 12, 1990

XF: _____

VISTA

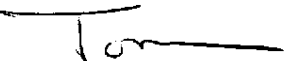
Interoffice
Communication

SUBJ: OSHA PROPOSED STANDARD ON OCCUPATIONAL EXPOSURE TO CADMIUM

Attached are SPI's comments to OSHA on the subject standard. SPI makes the point that cadmium pigments used in the compounding industry are chemically different from other cadmium compounds of concern, less bioavailable, and therefore less toxic. Based on those facts SPI proposes that OSHA should separate cadmium compounds that we use from this rulemaking, and for the time being, maintain the current PEL for certain cadmium pigments.

I still need you to provide me with a summary of any cadmium exposure data you have at your plants.

Also, please let me know if the cadmium containing materials you use are different than the materials SPI describes in their comments.



T. G. Grumbles

dlj
.106

Attachment

Distribution: Harry Pierce-Blane, Bruce Trego-Aber, Gregg Lipps-
Premiere

cc: Charlie Miller-Blane, R. W. Seymour-Aber, S. K. Saborsky-
Premiere

W. L. McClain, D. L. Cohen

VVV 000013176

CC Bower Tracy
Greg L. PPS

**The Society of the
Plastics Industry, Inc.**



1275 K Street, N.W., Suite 400
Washington, D.C. 20005
(202) 371-5200
FAX 371-1022

TO: Occupational Health and Environmental Issues Committee
FROM: Phil Stapleton *PS* Assistant Technical Director, Issues Analysis
DATE: May 14, 1990
RE: SPI Comments on Occupational Exposure to Cadmium; Proposed Rule

Attached is a copy of SPI's comments to OSHA in response to the proposed rule of February 6, 1990 (55 FR 4052) regarding occupational exposure to cadmium. These comments were submitted to OSHA on May 11, 1990.

If you have any questions, please call.

PJS/rc
Attachment

cc: Pat Toner - SPI
Lew Freeman - SPI
Richard LaLumondier - SPI
Maureen Healey - SPI
Rod Lowman - CSWS
Pat Hurd - Keller and Heckman

VVV 000013177

BEFORE THE
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Occupational Exposure to Cadmium;)
Proposed Rule and Notice of)
Hearing)
55 Fed. Reg. 4052)
February 6, 1990)

Docket No. H-057a

COMMENTS OF
THE SOCIETY OF THE PLASTICS INDUSTRY, INC.

Society of the Plastics Industry, Inc.
1275 K Street, N.W., Suite 400
Washington, D.C. 20005

May 11, 1990

VVV 000013178

I. INTRODUCTION AND STATEMENT OF INTEREST

These comments are being submitted on behalf of The Society of the Plastics Industry, Inc. (SPI)^{1/} in response to the Occupational Safety and Health Administration (OSHA) proposed rule entitled "Occupational Exposure to Cadmium" published in the February 6, 1990 Federal Register. 55 Fed. Reg. 4052, et seq.

In the proposed rule, OSHA solicited public comment on all relevant issues, including health effects, technological and economic feasibility, and provisions that should be included in the final cadmium standard. OSHA also recognized the uncertainty inherent in quantitative risk assessment and in the extrapolation of risks from animals to humans for purposes of estimating potential carcinogenicity. In particular, OSHA requested comment on the risks of adverse health effects related to cadmium exposure in specific industries and occupations, levels of cadmium exposure achievable through engineering and work practice controls, and the costs required to achieve the proposed Permissible Exposure Limits (PEL's).

SPI is committed to the concept of worker safety. SPI member companies strongly support hazard communication and worker training programs and strive to operate their facilities in a manner that ensures the safety and protection of workers, the public, and the environment.

A significant portion of SPI's membership could be affected by this rule if finalized in its present form. These members include not only those companies that produce cadmium-based pigments and those that compound pigments with resins, but also certain downstream processors of plastic resins that purchase cadmium pigments for their own use.

As noted in the following comments, SPI believes that the application of the proposed cadmium standards to the use of cadmium pigments in the plastics industry is inappropriate. In crafting this proposal, which assumes equal health risks from all cadmium compounds, OSHA has failed to recognize the unique nature of the cadmium sulfide-based pigments used in the plastics industry. Data from both animal studies and epidemiological studies confirm that cadmium pigments pose much lower risks to human health and thus should be regulated in a different fashion from many other cadmium compounds.

^{1/} The Society of the Plastics Industry, Inc. is a trade organization of more than 2000 members representing all segments of the plastics industry in the United States. SPI's operating units and committees are composed of resin manufacturing, distributors, machinery manufacturers, plastic processors, moldmakers, and other industry-related companies and individuals.

In these comments, SPI demonstrates that OSHA's proposed exposure limits are based on the potential health effects of cadmium compounds that differ from those compounds used in cadmium pigments. In addition, SPI's comments discuss various studies that have been performed on cadmium pigments which clearly indicate the lower bioavailability of these compounds. There is no conclusive evidence to indicate any substantial risk of developing cancer, kidney dysfunction or other adverse health effects from exposure to cadmium pigments at OSHA's current PEL. As a result of the available evidence, SPI recommends that the current PEL for cadmium be retained for cadmium pigments and that (if necessary) a separate future rule-making establish a separate standard for such cadmium compounds.

A number of issues raised in OSHA's proposed rule are addressed below. However, the absence of specific comment on other proposed provisions should not be taken as an endorsement of those provisions. In addition, individual SPI member companies may take exception to other aspects of the proposed rule and may state their particular concerns in separate written comments.

II. THE PLASTICS INDUSTRY RELIES ON CADMIUM PIGMENTS

Cadmium pigments possess a combination of essential properties that make them very important colorants for high temperature plastics. These properties include high temperature stability, high resistance to degradation by light, chemical stability, insolubility in organic solvents, non-migration and the ability to impart a wide range of colors and opacity.

Cadmium pigments have maintained technical superiority in plastics applications despite intensive developments in a very competitive market.

The heat capacity and specific heat of cadmium pigments cause them to function as excellent thermal conductors, and contribute to rapid heat release from molten plastic polymers. Various organic pigments which have been proposed to replace cadmium pigments do not possess such thermal properties. As a result, the use of organic substitutes cause molding cycles to be increased.

While cadmium pigments are relatively expensive, developing effective substitutes for cadmium pigments remains difficult. In nearly every case, substitution is not possible without deterioration of product quality or performance.

In general, the cadmium pigments in use today are based on cadmium sulfide or other relatively insoluble compounds. Table 1 lists the major cadmium-based pigments use in the United States.

TABLE 1

Major Cadmium-Based Pigments*

Cadmium Sulfide Concentrate
Cadmium Zinc Sulfide Concentrate
Cadmium Zinc Sulfide Lithopone
Cadmium Sulfoselenide Concentrate
Cadmium Sulfoselenide Lithopone

(*Source: Hazleton Laboratories America, Inc., 1977)

A positive correlation between cadmium solubility and cadmium absorption has been established using the laboratory rat as a test animal (Hazleton Laboratories, 1977). Authors of this study suggest that criteria relating cadmium exposure to cadmium absorption should consider the relative solubility of the cadmium compounds in question. Other studies by Rusch, et al (1986) and Glaser, et al. (1985) further support the relationship between solubility and bioavailability in cadmium compounds.

III. OSHA's PROPOSAL IS BASED ON AN EVALUATION OF HEALTH EFFECTS OF CADMIUM COMPOUNDS WHICH ARE NOT REFLECTIVE OF CADMIUM PIGMENTS.

In its proposal, OSHA described standards and guidelines developed by other Federal agencies and institutions to control cadmium exposures, including NIOSH, EPA, IARC, and ACGIH. It must be noted however, that the studies used by each of these bodies as the basis for conclusions regarding health effects of cadmium were performed on cadmium compounds which are not used in the plastic pigment industry.

Health endpoints of concern cited by OSHA in the proposed rulemaking include carcinogenicity (especially lung cancer) and adverse kidney effects. The major human study cited with regard to lung cancer was performed by Thun et al. (1985) which studied lung cancer in cadmium smelter workers. The cadmium compounds to which workers were exposed in this case are not the same as those used in cadmium pigments. Furthermore, the results of the study by Thun, et al. have been called into question by Lamm et al. (1988).

Also cited as evidence of carcinogenicity is a study by Takenaka et al. (1983) which involved inhalation of cadmium chloride in rats. Again, the cadmium compound evaluated in this study is not reflective of the primary cadmium compound (cadmium sulfide) used in plastic pigments.

If fact, the vast majority of studies on cadmium compounds that have suggested potential adverse health effects were conducted on cadmium compounds used in industries that are unrelated to plastic pigment use. These include epidemiological studies of workers in welding processes, cadmium smelters, and battery manufacturing plants. Further, the specific cadmium compounds most often implicated as posing significant health risks are cadmium oxide and cadmium chloride, neither of which is typically used in the coloration of plastics in the plastics industry. A variety of animal studies indicate that cadmium sulfide and other similar cadmium-based pigments are significantly less bioavailable than other cadmium compounds.

IV. CADMIUM COMPOUNDS USED IN PLASTIC PIGMENTS ARE FAR LESS BIOAVAILABLE THAN OTHER CADMIUM COMPOUNDS AND THUS POSE SIGNIFICANTLY SMALLER HEALTH RISKS.

The potential for adverse health effects caused by exposure to cadmium pigments has been investigated in many industrialized countries. The results of these studies clearly suggest that cadmium pigments differ from many other cadmium compounds in their bioavailability. Cadmium must be absorbed into the bloodstream for toxic effects to be realized. Even OSHA's contractors which conducted the supporting analyses for the proposed rule have recognized the important role played by solubility and other physical/chemical characteristics of different cadmium compounds in determining toxicological properties. In the report entitled, "A Review of the Scientific Evidence on the Health Effects of Cadmium in the Workplace" (Biomedical Consultants, Inc., May 1989) the authors state that "solubility differences and other physical/chemical characteristics significantly affect absorption and distribution to the sites believed to be involved in the toxicological response."

Cadmium compounds most commonly used in the manufacture of plastic pigments include cadmium sulfide, cadmium zinc sulfide, and cadmium sulfoselenide. The results of recent studies indicate that the cadmium in these cadmium pigments is far less available to the human body than cadmium from other exposure sources. If the cadmium is not absorbed, then it cannot result in kidney effects, tumor production or other adverse health effects. The single animal inhalation study that suggests the possibility of lung cancer from exposure to cadmium sulfide contains deficiencies which make drawing firm conclusions difficult. These deficiencies are discussed in Section B below.

A. STUDIES OF CADMIUM PIGMENTS AND KIDNEY EFFECTS

A variety of animal and epidemiological studies indicate that cadmium pigments are significantly less toxic than other forms of cadmium. These studies have been provided to OSHA and are included in the docket for this proposed rule. For the sake of brevity, these studies and their key findings will be summarized below:

- Hazelton Laboratories (1977) - Cadmium from pigments was from 100 to 1000 times less available to rats via ingestion than cadmium from cadmium chloride.
- Glaser, et al. (1986) - Significant differences in deposition, dissolution, clearance and toxicity were found between cadmium sulfide and either cadmium chloride or cadmium oxide in a rat inhalation study.
- Heinrich et al. (1986) - Kidney burden following exposure to cadmium pigment was approximately 13% of that following exposure to cadmium oxide in mice and hamsters.
- Rusch, et al. (1986) - Cadmium from inhaled pigment (cadmium sulfide) was two orders of magnitude less bioavailable than other forms of cadmium in rats exposed via inhalation.
- Miksche (1982) - No significant difference in urine cadmium content was found between workers involved in the application of cadmium pigment in the compounding of plastics and an age-matched control group. The study included twenty-one workers exposed for an average of 11.3 years to cadmium pigment dust.
- Feitz, et al. (1983) - Based on this study of workers involved in cadmium pigment manufacturing, the author concluded that the processing of pigments should be assessed differently from the processing of soluble cadmium compounds due to the lower bioavailability of the cadmium in pigments.

These and other studies clearly support the concept that cadmium must first be absorbed by the body in order to cause adverse health effects. These studies indicate that cadmium pigments are considerably less bioavailable than other forms of cadmium that have been shown to cause adverse effects on the kidney in animal and epidemiological studies.

B. STUDIES OF CADMIUM PIGMENTS AND CANCER

While the carcinogenicity of certain cadmium compounds has been suggested by various animal and epidemiological studies, it is important to point out that virtually none of these studies has suggested carcinogenicity of cadmium sulfide or other related cadmium compounds used in the pigments industry. The major works cited by OSHA (Thun, et al., (1985) and Takenaka et al. (1983)) are inappropriate for establishing the carcinogenicity of cadmium sulfide. Reports in OSHA's docket for this proposed rule have provided well-founded criticisms of both of these studies. For example, the study by Thun et al. has been criticized on the basis of possible arsenic exposures and cigarette smoking among the study cohort. (See Lamm, et al. - 1988).

The body of scientific information regarding the toxicity of cadmium clearly indicate that important differences exist between various cadmium compounds with regard to their absorption and thus their toxicity. It has generally been shown that soluble cadmium compounds (e.g. cadmium chloride) are more readily absorbed than the highly insoluble forms (such as cadmium sulfide). This finding has been put forth by the Agency for Toxic Substances and Disease Registry in its toxicological profile for cadmium (1989), in which it is stated:

"The toxicity of cadmium depends on the chemical and physical forms of the element. In general, soluble compounds... are better absorbed and hence more toxic than highly insoluble forms... Studies described here are focused mainly on cadmium oxide or cadmium chloride, and the results cannot be applied equally to all other cadmium compounds."

Thus, while the lung carcinogenicity via the inhalation route of cadmium chloride has been indicated in several animal studies, SPI believes that the carcinogenicity of other cadmium compounds has not been demonstrated. In fact even the evidence for cadmium chloride is equivocal. A study by Heinrich et al. (1986) indicated that inhalation exposure to cadmium oxide, cadmium chloride, cadmium sulfate, and cadmium sulfide for 40 to 60 weeks was not observed to increase lung tumors in hamsters or mice.

At this time, SPI is aware of only one study that suggests the possibility of cancer in a single animal species based on exposure to cadmium sulfide via the inhalation route. In this study (Oldiges, et al., 1986), rats were exposed to cadmium in several forms. In our opinion, this single animal study suffers from a number of deficiencies which call into question the study results. For example, lung nodule formation in this study was demonstrated only under extreme exposure conditions. The

apparently significant increase in mortality rate experienced in this study indicates that the maximum tolerated dose may have been exceeded. In addition only one species (Wistar rat) has shown a positive response. More recently, it has been suggested that the cadmium sulfide slurries used to generate the aerosols in this study are unstable when exposed to light and consequently decomposed to cadmium ions. This decomposition is an artifact of the aerosol generation process and is irrelevant to the assessment of risk from exposure to cadmium pigment dust. Thus, the study results suggesting adverse health effects due to cadmium sulfide exposure may have been significantly confounded by exposure to ionic forms of cadmium.

It is SPI's position that the laboratory studies to date do not provide sufficient evidence of carcinogenicity of cadmium sulfide and related compounds used in plastic pigments. This lack of evidence is consistent with other studies which have clearly indicated the lower bioavailability of cadmium contained in cadmium pigments.

V. THE PROPOSED PEL'S ARE INAPPROPRIATE FOR INSOLUBLE CADMIUM COMPOUNDS

Within the plastics industry, compliance with either of the two proposed PEL's (5 ug/m^3 or 1 ug/m^3) would be both technologically and economically infeasible. Promulgation of either of these standards would have a significant economic impact on many small companies and would reduce market share of U.S. companies to international competitors.

SPI believes that OSHA has underestimated the impact of the proposed rule on the plastics industry. In its economic impact analysis (JACA Corp., March 1988), OSHA identified only five companies as producers of cadmium pigments. While these five companies may represent the largest pigment producers in the U.S., many other small companies are also involved in the production of cadmium-based pigments for the plastics industry. Second, it does not appear that OSHA's economic analysis considered the impacts of the proposed PEL's on compounders (including concentrate producers and resin producers), who incorporate dry color pigments into plastic resin pellets for resale. SPI's membership includes over 100 companies involved in the pigment production and/or compounding businesses; again, many of these companies are small businesses. Many of these companies would be significantly affected by the proposed standards.

Further, many plastic processing companies purchase the dry color cadmium pigments for their own use. These companies would also be affected by the proposed standards.

Thus far, substitution of non-cadmium pigments has not been possible without deterioration in product quality or performance. Even if suitable substitutes did exist, it has been estimated that a typical injection molding company would incur an increase in cost of between 25% - 75% of the base resin cost to switch to potentially viable organic substitutes. In addition to the higher costs associated with the organic substitutes under consideration, most (if not all) of the organic pigments that have been proposed do not possess the same properties of the cadmium-based pigments.

In the case of cadmium pigments, the question is not just whether there are less toxic substitutes, but whether any suitable substitutes exist. Even if substitutes with acceptable, but not necessarily equivalent, quality and performance could be identified, potential toxicity of these substitutes must be considered. In general, there is less known about the toxicity of the substitutes. However, at least one proposed organic substitute for cadmium-based pigments has been shown to decompose at higher temperatures, resulting in the formation of possible carcinogens. It may not be prudent to replace a material with known hazards (and for which bioaccumulation is readily measurable) by one with unknown hazards (and for which bioaccumulation may not be measurable). This pitfall may be the unintended result if cadmium pigments are essentially precluded from use by the regulatory impact of OSHA's Proposed Rule.

SPI also believes that the engineering and work practices specified in the proposed rule would not lower exposures sufficiently to achieve the proposed PELs in most segments of the plastics industry. As a result, virtually all workers in certain segments would have to rely on respirators to reduce exposures.

For example, the following table (Table 2) provides cost data on a system installed by one SPI member (a compounder) to reduce and capture fugitive dust generated by cadmium pigments. Despite the relatively high costs for purchase and installation of this system, the proposed PEL of 5 ug/m³ would not be achieved at this location. Thus, virtually all the plant workers would have to be placed in respirators. We provide this information as an example of a relatively expensive engineered system that would still require extensive respirator usage to comply with the proposed rule.

VVV 000013186

TABLE 2

EXPENDITURES FOR CADMIUM DUST COLLECTOR SYSTEM*

1.	Closed Batch Mixing Vessels	\$ 500,000
2.	Mixing Dust pick-up Booths	6,400
3.	Pigment Weigh up Dust pick-up booth	3,200
4.	Vessel Preparation Dust pick-up booth	3,200
5.	Portable Emergency Dust pick-up booth	2,800
6.	Small mixing dust pick-up System	7,000
7.	Pack out dust pick-up System	1,200
8.	Central Vacuum System	18,000
	Total Capital Expenditure	\$ 541,800

* Does not include on-going expenditures for personal protective equipment, filters for dust pick-up booth, etc.

VI. STATUTORY PREREQUISITES FOR REVISING THE CADMIUM PEL HAVE NOT BEEN SATISFIED

A. STATUTORY FRAMEWORK

OSHA may not finalize the rule as proposed because it has not satisfied the statutory requirements for revising the cadmium PEL. As OSHA notes in the Preamble to this rulemaking, the Agency "before issuing any new standard, must determine that it is reasonably necessary and appropriate to remedy a significant risk of material health impairment." 55 Fed. Reg. at 4057 (1990), citing Industrial Union Dept. v. American Petroleum Institute, 448 U.S. 607 (1980). Then, "before [OSHA] can promulgate any permanent health or safety standard, [the Agency] is required to make a threshold finding that a place of employment is unsafe in the sense that significant risks are present and can be eliminated or lessened by a change in practices." 55 Fed. Reg. at 4057 (1990), quoting Industrial Union Dept., 448 U.S. at 642.

OSHA must derive its finding of significant risk from the best available evidence and this evidence must be substantial. Id. at 656; see also Section 6(b)(5) of the Occupational Safety and Health Act (OSH Act), 29 U.S.C. Section 655(b)(5). When determining whether substantial evidence exists, OSHA must use "reputable scientific thought" to demonstrate that significant risk of health impairment is at least "more likely than not." Industrial Union Dept., 448 U.S. at 656-657 and n. 64.

After finding a significant risk, OSHA must also consider technological and economic feasibility when developing a final standard. See e.g., 52 Fed. Reg. 34460, 34511-34520 (1987) (benzene). In promulgating a health and safety standard for toxic materials, OSHA is directed to "set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity ...". Section 6(b)(5) of the OSH Act, 29 U.S.C. Section 655(b)(5) (emphasis added).

B. NO DEMONSTRATION OF SIGNIFICANT CARCINOGENIC RISK

Our review of the health effects literature on cadmium shows that there is no conclusive evidence of carcinogenicity or kidney dysfunction in animals from exposure to the cadmium pigments of interest to the plastics industry, nor does the epidemiologic literature support the conclusion that such cadmium pigments are human carcinogens or cause chronic kidney dysfunction. Moreover, the animal studies and epidemiologic studies that form the basis for OSHA's proposal are plainly inadequate. OSHA's analysis fails to embody the "reputable scientific thought" that must be the foundation of substantial evidence of significant risk.

Because there is inadequate evidence of cadmium pigments' carcinogenicity, OSHA lacks substantial evidence of significant risk and may not amend the PEL for these compounds on this basis. The situation here should be compared with other rulemakings where the evidence of human carcinogenic potential was much clearer. For example, the Supreme Court found OSHA's evidentiary base for benzene to be inadequate. See, e.g., Industrial Union Dept. 448 U.S. at 653-654. The evidence OSHA used in that case was more substantial than that presented for cadmium in the proposed rule.

C. THE CADMIUM PROPOSAL IS TECHNOLOGICALLY AND ECONOMICALLY INFEASIBLE

Even if there is substantial evidence of risk, the standard must be technologically and economically feasible. 55 Fed. Reg. at 4057; see also Section 6(b)(5) of the OSH Act, 29 U.S.C. Section 655(b)(5). SPI's comments demonstrate that it is

technologically infeasible to control to either of the two proposed PELs (5 ug/m^3 or 1 ug/m^3) using engineering or administrative controls. Further, as illustrated in Table 2, the cost of installation of a cadmium dust collector system cost in excess of \$500,000 in one plant. These costs do not include on-going expenditures for personal protective equipment, filters for dust pick-up booths, etc. Moreover, despite the installation of this system, it is estimated that the proposed PEL of 5 ug/m^3 would be significantly exceeded and thus, virtually all plant employees would be dependent upon respirators in order to achieve compliance with the proposed exposure limit.

D. CADMIUM PIGMENTS MERIT SEPARATE TREATMENT

In the Preamble to this proposal, OSHA states that "in keeping with the recommendations of other federal agencies (e.g., NIOSH and EPA) and the ACGIH, this proposal does not differentiate between fumes and dust"... "it is generally accepted that overexposures to cadmium in any form results in the same final chronic endpoints, cancer and kidney dysfunction (Ex. 4-27, 4-28, 4-68, and 4-19)." Although these studies may support OSHA's proposed reduction in the PEL for cadmium fumes, dust, and salt compounds, these studies do not address exposures related to the cadmium pigment compounds used in the plastics industry.

Since OSHA has not satisfied the legal criteria that must support any amendment of the PEL for cadmium pigments, the Agency cannot finalize the rule for cadmium pigments as proposed. That is, OSHA should maintain the current PEL for cadmium pigments and identify cadmium pigments for future follow-up evaluations and possible separate rulemaking if warranted. In any future evaluation, OSHA should carefully examine the health-related database on exposures to cadmium pigments.

VII. THE CURRENT PEL SHOULD BE RETAINED FOR CADMIUM PIGMENTS, PENDING FURTHER STUDY

SPI believes that OSHA has not adequately shown that cadmium pigments pose a significant risk even at the current PEL. The studies which constitute the foundation for OSHA's Proposed Rule (Takenaka *et al.*, Thun *et al.*) do not deal with cadmium pigments at all. These studies cannot be used to support a finding of significant risk resulting from exposure to cadmium pigment dust. While the pigment health studies may be insufficient to develop an independent health assessment, OSHA cannot ignore their implication for lower bioavailability of cadmium from pigments. The only study to implicate cadmium sulfide possible as a carcinogen (Oldiges *et al.*) is seriously flawed and, by OSHA's admission, is "unsuitable for quantitatively assessing the risk associated with each of the cadmium compounds studied or for assessing their relative carcinogenic potency."

SPI believes that OSHA has not provided adequate justification for lowering the PEL for cadmium pigments. In the absence of adequate data, the current PEL should remain in effect for cadmium pigments. Neither is there any justification to modify the current ceiling limits for cadmium pigments.

For the reasons stated above, SPI recommends that the current PEL be maintained for cadmium pigments. Studies indicate that the cadmium in cadmium pigments is significantly less bioavailable than the cadmium found in many other compounds. Health risks associated with these pigments are orders of magnitude lower than the cadmium compounds upon which OSHA's proposal appears to be based. Yet the proposed PELs would apply equally to these less bioavailable compounds resulting in the needless elimination of cadmium compounds from their valuable and unique applications in the plastics industry. The elimination of these cadmium compounds could force the plastics industry to resort to inferior substitutes whose health and environmental risks have not been adequately tested.

A two-tiered regulation for "cadmium and cadmium compounds" would provide for protection of human health and would not impose unnecessary costs on the plastics industry. If necessary, OSHA could develop a separate, future rulemaking on exposure limits for cadmium pigments. It is SPI's understanding that the ACGIH is currently considering the development of a separate cadmium exposure guideline for the cadmium pigments industry.

SPI appreciates the opportunity to submit these comments. We look forward to working with OSHA to establish an appropriate standard for the safe use of cadmium pigments.

Respectfully submitted,



H. P. Toner
Vice-President,
Technical Affairs

HPT/rc
cadcomm.apr

VVV 000013190

TO: John Bergman-Velsicol

FAX # 708-698-9714

FROM: T. G. Grumbles

TGG: ~~JCL~~: ~~EPT~~: ~~WCH~~: AJO: RF

DATE: June 12, 1990

XF: 283.5

SUBJ: ALFOL 810 ALCOHOL SPECIFICATIONS

XF: Customer File (Mkt. Admin)

The 810 ALFOL Alcohol that we are discussing with you is a "tower cut" alcohol, that is, it comes directly from the process with no blending.

The distribution is as follows, based on our standard specifications:

C6OH and lower WT%	1 max	0.4
C8OH, WT%	39-47	45.2
C10OH, WT%	51-59	53.7
C12OH and higher, WT%	1 max	0.7

Please call me at 713-588-3445 with further questions.

TG

T. G. Grumbles

dlj

VVV 000013191

Interoffice
Communication

TO: R. D. Gamblin

FROM: T. G. Grumbles

DATE: July 13, 1990

SUBJ: PROGRESS REPORT

VISTA

1. Letters were drafted for Plant Managers to send to US Senators regarding S.2637 proposing to ban the use of lead additives in plastic.
2. The CLER Communications Committee met to discuss activities. Plans were developed to publicize technical papers on LAS being presented at the SETAC meeting in November.
3. EPA promulgated new air emission control regulations on distillation column vents and air oxidation reactor vents. They also proposed a new regulation for reactor vents. Memos highlighting impacts on Vista were issued and the regulations distributed. These New Source Performance Standards have a potential impact on Vista. We have been anticipating these for some time so they have been considered in all appropriate plant modifications.
4. The Annual Environmental Meeting feedback questionnaires were reviewed and a summary issued to participants.
5. TGG and JCL assisted Manufacturing in revising a five year environmental capital expenditure projection.
6. Draft comments to EPA on the Aberdeen Superfund site report done by NUS were reviewed and suggested modifications were given to Conoco.
7. TGG conducted industrial hygiene training for the temporary safety inspector, assigned to the project EXAM and the ethylene turnaround.
8. The Clean Air Act Conference Committee is assigned and will begin work soon. The Senate appointed nine members while the House has appointed 132 members. To quote... "The sheer size... has slashed all hopes of an orderly clean air conference". Another quote... "The huge list is an attempt by House leadership to take care of anyone who can benefit tangentially from it politically".
9. 33 COEDS ordered MSDS's were sent.

Tom G.

T. G. Grumbles

VVV 000013192

dlj