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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

February 6, 1995

MEMORANDUM

SUBJECT: Letter to CLC on Regulatory Status of Acrylic Plastic Dust

FROM: Michael Shapiro, Director
Office of Solid Waste

TO: Joseph R. Franzmathes, Director
Waste Management Division
Region IV

Allyn M. Davis, Director
Hazardous Waste Management Division
Region VI

Robert L. Duprey, Director
Hazardous Waste Management Division
Region VIII

Attached, for your information, is Headquarter's response to a request from Composite Leasing Corporation for a determination on the regulatory status of acrylic plastic dust that is sent to India for use in the manufacture of acrylic plastic sheets. The dust is generated by blasting paint and coatings off of aircraft. CLC requested and received interpretations on this issue from each of your Regions. As explained in the attached letter, HQ's position is that the material clearly fits within the category of a spent material being reclaimed.

Attachment

RO 11937

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 6, 1995

Mr. Alan Perkins
Williams & Anderson
Twenty-Second Floor
111 Center Street
Little Rock, Arkansas 72201

Dear Mr. Perkins:

Thank you for your letter dated December 8, 1994, on behalf of Composite Leasing Corporation requesting clarification regarding the regulatory status of recycled acrylic plastic dust under the Resources Conservation and Recovery Act (RCRA). Specifically, you request written confirmation from the Environmental Protection Agency (EPA) of your interpretation of how RCRA applies to acrylic plastic dust that is generated from Plastic Media Blasting (PMB) and sent to India for use in the manufacture of acrylic plastic sheets. You state that you consider the acrylic plastic dust to be excluded from RCRA regulation under §261.2(e)(i) as a secondary material that is being used as an ingredient in an industrial process to make a product.

As you correctly note in your letter, the exclusion provided under §261.2(e)(i) for materials that are recycled as ingredients is applicable only if the materials are not being reclaimed prior to use or reuse. According to your letter, the acrylic plastic dust must undergo several refinement steps to produce the specification grade methylmethacrylate monomer (MMA monomer) that is used to produce acrylic plastic sheets. The first step involves heating the PMB dust in the presence of a molten lead bath. In this process, the acrylic polymer is depolymerized to produce MMA monomer and cadmium and chromium present in the PMB dust are partitioned off to the molten lead bath. The MMA monomer is then further purified through distillation in order to meet product specifications. The specification grade monomer is then

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used as an ingredient in the production of acrylic sheets.

Under §261.1(c)(4), a material is reclaimed if it is processed to recover a usable product, or if it is regenerated. In the process you describe, the PMB dust clearly undergoes reclamation prior to its use as an ingredient to produce acrylic plastic sheets (i.e., recovery of the monomer in the first step and regeneration or removal of impurities from the monomer in the second step). The PMB dust would therefore not qualify for exclusion from RCRA regulation under §261.2(e).

Your letter also raises the question of whether the PMB dust would be considered a "sludge" or a "spent material" under RCRA. This distinction is important, as you indicate, because RCRA provides an exclusion for characteristic sludges that are being reclaimed, while spent materials being reclaimed are subject to regulation under RCRA (see §261.2(c)(3)). A sludge, as defined under 40 CFR §260.10, is "any solid, semi-solid, or liquid waste generated from a municipal wastewater treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant." According to your letter, an air filtration system is used as a means to collect the acrylic plastic dust. Since the primary purpose of the filtration system is not air pollution control per se but rather collection of PMB dust for further processing, the filtration system would not be considered an air pollution control device and the PMB dust would therefore not be considered a sludge as defined by the regulations.

A "spent material" is defined under RCRA as "any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing." As clarified in the March 24, 1994, Memorandum from Michael Shapiro to the Regions, which you cite, EPA has consistently interpreted this definition to include "materials that have been used and are no longer fit for use without being regenerated." 50 FR at 618 (January 4, 1985); 48 FR at 14476 (April 4, 1983). The PMB dust clearly fits within the meaning of "spent material" as defined by RCRA and would therefore be regulated as such in accordance with §261.2(c)(3).

In summary, for reasons stated above the PMB dust that is collected by Composite Leaching Corporation and sent to India for use in the manufacture of acrylic plastic sheets would be

considered a spent material being reclaimed. Because the material is being reclaimed prior to use, it would not be eligible for exclusion from RCRA under §261.2(e). Rather, as a spent material being reclaimed it would be subject to regulation as a RCRA waste in accordance with §261.2(c)(3).

Finally, I apologize for any confusion caused by conflicting interpretations you may have received regarding the regulatory status of this material. Generally, EPA Regional offices and States authorized to implement the RCRA program make determinations regarding the requirements that apply in specific situations. However, in situations such as yours where a number of different interpretations have been received, a final determination from EPA headquarters may be required.

You should also note that an effort is underway within the Office of Solid Waste to develop a simpler, more streamlined approach to regulating recycling under RCRA. A copy of Michael Shapiro's Memorandum to the Regions outlining this effort is enclosed for your information. Questions about future regulatory efforts should be directed to Mike Petruska at (202) 260-8551. If you have further questions regarding the issues addressed in this letter please contact Becky Daiss at (202) 260-8718 or Mitch Kidwell at (202) 260-8551.

Sincerely,

Michael Shapiro, Director
Office of Solid Waste

Enclosure

Attachment

REQUEST FOR CLARIFICATION OF THE REGULATORY STATUS OF
RECYCLED
ACRYLIC PLASTIC DUST UNDER THE RESOURCE CONSERVATION AND
RECOVERY
ACT

Submitted To:

Michael H. Shapiro, Director
Office of Solid Waste
United States Environmental Protection Agency
401 M Street, S.W. (M2101)
Washington, D.C. 20460

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Date Submitted:

December 8, 1994

VIA HAND DELIVERY

Michael H. Shapiro, Director
Office of Solid Waste
United States Environmental
Protection Agency (M2101)

RO 11937

401 M Street, S.W.
Washington, D.C. 20460

Re: Request for Clarification of the Regulatory Status of
Recycled Acrylic Plastic Dust Under the Resource
Conservation and Recovery Act

Dear Mr. Shapiro:

On behalf of Composite Leasing Corporation ("Composite"), we write to request confirmation from the United States Environmental Protection Agency ("EPA" or "the Agency") that acrylic plastic dust resulting from the Plastic Media Blasting ("PMB") of paints and coatings from aircraft and aircraft components hereinafter "PMB dust") is not a "solid waste" within the meaning of the Resource Conservation and Recovery Act ("RCRA") when used as an ingredient in the manufacture of acrylic plastic sheets. This issue warrants the attention of EPA Headquarters in light of conflicting determinations issued by EPA Regions IV, VI, and VIII concerning the regulatory status of recycled PMB dust, which sometimes exhibits the RCRA Toxicity Characteristic ("TC"). As discussed in detail below, the recycling of PMB dust involves "use or reuse" of that material as an ingredient within the meaning of 40 C.F.R. §261.2(e)(1)(i), and thus the PMB dust is not a solid waste from its point of generation. Accordingly, PMB dust is not subject to regulation as a hazardous waste, even if the material exhibits a characteristic of hazardous waste. See 40 C.F.R. §261.1(a).

I. Background

A. Description of PMB Technology

PMB is a process that is used widely by the U.S. military and the airline industry for the safe and efficient removal of paints and coatings from aircraft and aircraft components, and other machinery and equipment. It is a pneumatic process similar to sandblasting, but uses engineered plastic abrasive instead of sand. The plastic abrasive is harder than the coating to be removed, yet softer than the underlying surface, thereby allowing coatings to be stripped repeatedly without damaging the surface. This is particularly important in the case of non-steel surfaces (such as aluminum and fiberglass), which cannot tolerate the more aggressive abrasion of sandblasting.

The PMB process is an environmentally sound and effective substitute for wet chemical strippers. Depainting of airframes and components traditionally has been achieved by using methylene chloride-based chemicals. EPA recently has proposed phasing out the use of methylene chloride-based strippers due to the adverse environmental impacts of this practice. See 59 Fed. Reg. 29,216 (June 6, 1994) (proposed NESHAP for Aerospace Manufacturing and Rework). PMB is recognized by EPA as one of the preferred substitutes. See *id.* at 29,243.

Among the users of PMB technology is Hill Air Force Base, Utah ("Hill AFB"). At Hill AFB, PMB occurs within the confines of three enclosed "blast booths." Plastic abrasive is applied under air pressure through a blast nozzle to the surface being stripped. The plastic abrasive then falls, along with paint particles and other material from the surface being prepared, to the mesh interior floor of the blast booth. Material that is smaller than one-half the size of a dime slips through the mesh, and is air-washed and classified to recover for reuse those plastic abrasive particles that are of sufficient size to remove coatings effectively. (see footnote 1) The air washing process also removes most of the paint chips and other foreign matter from the plastic abrasive stream. The undersized plastic abrasive particles and other materials air-washed and classified from the reusable plastic abrasive stream are collectively referred to as "PMB dust." PMB dust, which consists of 94 to 96 percent acrylic plastic, sometimes exhibits the TC for chromium and/or cadmium due to the inclusion of minute paint chips.

B. The PMB Dust Recycling Program

In 1989, Composite began working with Hill AFB to identify potential alternatives to the disposal of PMB dust as a hazardous waste. The result of that effort was a program whereby Composite leased Solidstrip Plastic Abrasive to Hill AFB, collected in containers the PMB dust produced on-site, and shipped that material to Globe Plastics, India for use as an ingredient in the manufacture of acrylic plastic sheets. (see footnote 2) Globe Plastics purchases PMB dust from Composite for \$0.02/lb and pays for shipping pursuant to a long-term output contract.

PMB dust is placed in large flexible fabric bags (about 1,100 pounds each) and labeled with a unique, identifying code in

preparation for shipment to the recycler. Random samples of the dust are analyzed to ensure that it meets specifications for use in acyclic sheet manufacture. The containerized dust material is then transported to India. Upon arrival in Bombay, PMB dust passes through customs, where it is sampled by the Indian Customs Chemical Examiner. The government of India, and the State of Maharashtra in which Globe Plastics is located, are aware of the content of the PMB dust and have consented to its importation for use in the manufacture of acrylic plastic sheets.

The first step of the acrylic sheet manufacturing process at Globe Plastics involves the conversion of the acrylic plastic PMB dust to produce methylmethacrylate monomer ("MMA monomer"). (see footnote 3) Up to 3,000 pounds of PMB dust is fed into one of three furnaces, where it is heated to approximately 600°C in the presence of a molten lead bath. Sustained heating at this temperature in an oxygen-starved environment for approximately 18 to 20 hours causes the acrylic polymer to depolymerize or "crack," resulting in the production of MMA monomer in the form of a gas. The MMA monomer gas is collected and liquified in a water-cooled condensor. Cadmium and chromium in the PMB dust partitions to the lead bath, which is never discarded. (see footnote 4)

The liquid MMA monomer is approximately 95 to 98 percent pure. The remaining two to five percent of the liquid product consists of organic chemical impurities resulting from incomplete conversion of the PMB material. These impurities impart a blackish color to the MMA monomer stream, which is undesirable because the MMA monomer is used by Globe Plastics to produce transparent acrylic plastic sheets. Further refinement of the liquid MMA monomer product therefore is necessary in order to meet product specifications for the acrylic plastic sheets. The liquid MMA monomer is purified through distillation and recondensed to liquid form. The organic chemical still bottoms resulting from the purification of MMA monomer are routed to the oil-fired furnace used to heat the molten lead bath, where they are burned as a supplemental fuel. (see footnote 5)

In the final step of the production process, MMA monomer is combined with catalysts and coloring agents. The resulting mixture is poured into dies and cured in water baths. The typical cure time is three hours, but varies depending on the thickness of the acrylic sheets being produced. After curing, the acrylic sheets are covered with paper in preparation for shipment to

customers.

C. Previous EPA and State Regulatory Determinations Concerning Recycled PMB Dust

Prior to awarding a contract to Composite for the above described PMB recycling program, Hill AFB sought a regulatory determination from the Utah Department of Environmental Quality ("Utah DEQ") that the recycled PMB dust would not be subject to regulation as a solid and hazardous waste. (see footnote 6) After an extensive review of the process by which PMB dust is produced and handled, beginning at Hill AFB and ending at Globe Plastics, Utah DEQ concluded that the proposed recycling program constituted "use or reuse" of PMB dust as an ingredient in an industrial process. See Letter dated February 3, 1992 from Dennis R. Downs, Director, Division of Solid and Hazardous Waste, Utah DEQ, to Col. William M. Henabray, Office of the Staff Judge Advocate, Hill Air Force Base ("1992 Utah DEQ Letter") (Attachment 3). (see footnote 7) Based on Utah DEQ's regulatory determination, a copy of which was furnished by that agency to EPA Region VIII, Hill AFB awarded a contract to Composite to begin recycling PMB dust.

Fourteen months later, in April 1994, EPA Region VIII sent a letter to Utah DEQ stating that the PMB dust produced at Hill AFB was a "spent material" that was being sent for "reclamation" in India and therefore was subject to regulation as a solid and hazardous waste. Letter dated April 11, 1994 from Robert L. Duprey, Director, Hazardous Waste Management Division, EPA Region VIII, to Dennis Downs, Director, Division of Solid and Hazardous Waste, Utah DEQ ("Region VIII Letter") (Attachment 5). The purported basis for Region VIII's position was a March 24, 1984 Memorandum from Michael Shapiro, Director, Office of Solid Waste, EPA, to Hazardous Waste Management Division Directors, Regions I X, entitled "Definition of Spent Material" ("March 24, 1994 Memorandum") (Attachment 6). That memorandum, however, does not in any way speak to the question of what constitutes "reclamation" of a spent material (or any other secondary material), see *id.*, and EPA Region VIII provided no other support for its conclusion that "Hill AFB is currently exporting the beadblast material to India for reclamation." Region VIII Letter at 1. (see footnote 8)

In response to Region VIII's April 11, 1994 Letter, Utah DEQ informed Hill AFB that it had "reevaluated" the PMB dust recycling process:

[t]he spent beadblast material generated by [Hill AFB] must be processed to recover a usable product, methylmethacrylate monomer. This is achieved using a distillation process in India. This is clearly a form of reclamation.

Letter dated April 27, 1994 from Dennis R. Downs, Executive Secretary, Utah Solid and Hazardous Waste Control Board, to James R. Van Orman, Director, Environmental Management Directorate, Hill Air Force Base ("1994 Utah DEQ Letter") (Attachment 7). Based on this letter, and Region VIII's April 11, 1994 Letter, Hill AFB terminated its contract with Composite, and began handling all PMB dust that exhibits the TC in accordance with applicable Subtitle C requirements.

In separate determinations, EPA Regions IV and VI also have determined that the recycling of PMB dust involves "reclamation. Region IV concluded that "the cracking operation will regenerate the blasting media," and thus "meets the definition of reclamation in 40 C.F.R. 261.1(c)(4)." Letter dated August 11, 1993 from John E. Dickinson, P.E., Chief, RCRA Compliance Section, EPA Region IV, to Jerome H. Rhodes, at 3 ("Region IV Letter") (Attachment 8). Region VI determined that the depolymerization of PMB dust to produce MMA monomer is a "heat reactor distillation process," and thus "[t]he facility is clearly 'processing' the plastic dust to recover a usable product." Letter dated September 16, 1993 from George R. Alexander, Jr., Regional Counsel, EPA Region VI, to G. Alan Perkins, at 2 ("Region VI Letter") (Attachment 9). Region VI also determined, however, that the PMB dust was a characteristic "sludge" because it is "retrieved through air filtration." *Id.* Accordingly, Region VI concluded that the dust is not subject to regulation when "reclaimed." *Id.*

II. Discussion

A. PMB Dust is Used as an Ingredient in the Manufacture of Acrylic Plastic Sheets Without Being Reclaimed

Under EPA's regulations, materials are not solid wastes when they are recycled by being "used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed." 40 C.F.R. §261.2(e)(1)(i). For example, "the use of chemical industry still bottoms as feedstock" to make new products is a form of recycling that does not involve solid

wastes. 50 Fed. Reg. 614, 637 (Jan. 4, 1985). See also Letter dated March 22, 1988 from Sylvia K. Lowrance, Director, Office of Solid Waste, EPA to Hyman Bzura (copper chloride and copper ammonium chloride by-products used to produce copper sulfate and copper hydroxide are not solid wastes). In such cases, components of the secondary materials, which "function as raw materials," 50 Fed. Reg. at 637, become incorporated into a new product.

In contrast, if "distinct components of the [secondary] material are recovered as separate end products," 40 C.F.R. §261.1(c)(5)(i), the material is being "reclaimed," rather than used as an ingredient. 50 Fed. Reg. at 637. For example, the recovery of lead from a spent lead-acid battery is a form of reclamation (i.e., recovery of a usable product). 40 C.F.R. §261.1(c)(4). Secondary materials that are "processed to remove contaminants in a way that restores them to their original usable condition," such as spent solvents that are regenerated, also are said to be "reclaimed." 50 Fed. Reg. at 633. See also 40 C.F.R. §261.1(c)(4).

In light of the foregoing, it is evident that the recycling of PMB dust to produce acrylic plastic sheets is properly characterized as "use or reuse" of the dust as an ingredient, rather than "reclamation" of that material. "Distinct components" of PMB dust -- which is comprised primarily of acrylic plastic particles -- are not recovered as separate end products. Instead, PMB dust, an acrylic polymer, is "cracked" or depolymerized into its constituent elements, molecules of MMA monomer, and those constituents are then catalytically recombined along with coloring agents to produce a new product -- acrylic plastic sheets.

The recycling of PMB dust is analogous to the recycling of spent sulfuric acid to produce virgin sulfuric acid -- a process that "the Agency . . . does not think . . . involves reclamation." 50 Fed. Reg. at 634. Spent sulfuric acid is burned to derive sulfur as sulfur dioxide gas. This gas is purified, catalytically converted, and absorbed into existing sulfuric acid as part of the same industrial process. 48 Fed. Reg. 14,472, 14,487 n.30 (April 4, 1983). After a review of the sulfuric acid recycling process, EPA determined that:

This process does not constitute reclamation because the spent sulfuric acid is neither regenerated (impurities are not removed from the spent sulfuric acid to make it

reusable) nor recovered (acid values are not recovered from the spent acid). It is used as an ingredient.

Id.

Just as spent sulfuric acid is converted into sulfur dioxide in the course of producing virgin sulfuric acid, acrylic plastic PMB dust is converted into MMA monomer for use in the production of acrylic plastic. The MMA monomer produced by the cracking of PMB dust is "purified," and then "catalytically converted" to create acrylic plastic sheets. See 48 Fed. Reg. at 14,487 n.30. MMA monomer is as much an "ingredient" in the production of acrylic plastic sheets as sulfur dioxide gas is an "ingredient" in the production of sulfuric acid. PMB dust is neither regenerated (impurities are not removed from the acrylic plastic to make it reusable) nor recovered (acrylic plastic is not recovered from the PMB dust).

The recycling of PMB dust to produce acrylic plastic sheets does not constitute "reclamation." PMB dust is not "processed to recover a usable product." 40 C.F.R. §261.2(c)(4). That concept is applicable to recycling situations where a "distinct component" of the recycled material is retrieved (recovered) as an "end product," such as "when metals are recovered from metal containing secondary materials." 40 C.F.R. §261.2(c)(5)(i). Such is not the case with the recycling of PMB dust. MMA monomer is not a "distinct component" of the PMB dust, the latter of which is comprised of particles of acrylic plastic polymer, paint chips, and other materials blasted from the aircraft surface. Instead, MMA monomer is a new chemical substance. Thus, the assertions of Region VI and Utah DEQ that Globe Plastics processes PMB dust to "recover" a usable product are wrong. See Region VI Letter at 2; 1994 Utah DEQ Letter at 1. (see footnote 9) PMB dust is instead used to produce a usable product.

Finally, PMB dust is not "regenerated" by Globe Plastics. See 40 C.F.R. §261.2(c)(4). PMB dust is not "restore[d] to [its] original usable condition" when it is used to manufacture acrylic plastic sheets. Unlike a spent solvent, which is "regenerated" through the removal of impurities, PMB dust is chemically transformed to produce a new material. Indeed, the mere removal of the paint chips and other matter "contaminating" the PMB dust would not restore the dust to its "original usable condition" because the PMB dust particles would remain too small for use as

blasting media. Accordingly, the conclusion of EPA Region IV that "the cracking operation will regenerate the blasting media" is plainly incorrect. Region IV Letter at 3.

In summary, Utah DEQ's original determination that the recycling of PMB dust to produce acrylic plastic sheets constitutes "use or reuse" of the dust as an ingredient was correct. The recycling of PMB dust is analogous to the recycling of spent sulfuric acid, a process that EPA has concluded does not involve "reclamation." PMB dust is not processed to recover a usable product, nor is it regenerated. It is instead used to produce a usable product through use as an ingredient.

B. PMB Dust Used as an Ingredient Satisfies the Criteria for Exclusion from the Definition of Solid Waste

As previously demonstrated, PMB dust falls within the scope of 40 C.F.R. §261.2(e)(1)(-I) as a material used as an ingredient in an industrial process to make a product without reclamation. However, EPA's regulations provide further that materials "used as ingredients" may nevertheless be deemed solid wastes if they are: (1) "used in a manner constituting disposal"; (2) "burned for energy recovery, used to produce a fuel, or contained in fuels"; (3) "accumulated speculatively"; or (4) identified at 40 C.F.R. §§261.2(d)(1)-(2) as "inherently waste like materials." 40 C.F.R. §261.2(e)(2). As demonstrated below, PMB dust does not fall within any of those categories, and thus satisfies the criteria for exclusion from the definition of solid waste.

First, PMB dust is not "used in a manner constituting disposal." 40 C.F.R. §261.2(e)(2)(i). PMB dust itself is not "applied to or placed on the land," see 40 C.F.R. §266.20, nor is PMB dust used to produce a product for land application (e.g., fertilizer, asphalt, cement). Instead, PMB dust is used to produce MMA monomer, which then is reacted to produce acrylic plastic sheets. Neither MMA monomer nor acrylic plastic sheets are "applied to the land."

Second, PMB dust is not "burned for energy recovery, used to produce a fuel, or contained in fuels." 40 C.F.R. §261.2(e)(2)(ii). PMB dust is depolymerized -- not "burned" -- to produce MMA monomer in the presence of a molten lead bath, which serves as a heat transfer agent. This is a non-combustion process, and energy is not recovered. Moreover, PMB dust is not

"used to produce a fuel" or "contained in fuels." PMB dust is used only to produce MMA monomer, all of which is used to manufacture acrylic plastic sheets. Although the chemical still bottoms from the purification of MMA monomer are burned as a supplemental fuel in the oil-fired furnace used to heat the molten lead bath, those still bottoms result from the distillation of a new chemical (MMA monomer), not PMB dust. (see footnote 10)

Third, PMB dust is not "accumulated speculatively." 40 C.F.R. §261.2(e)(2)(iii). PMB dust is stored at Hill AFB for only a short period of time (no more than 3 months), until enough material is available to fill a shipping container. When the dust reaches Globe Plastics, it is used immediately. Any storage of PMB dust that occurs is attributable solely to the capacity limitations of the three furnaces, each of which can hold up to 3000 pounds of dust at any given time. (see footnote 11)

Finally, PMB dust is not "inherently waste-like" within the meaning of 40 C.F.R. §261.2(d). PMB dust is not subject to the F020, F021, F022, F023, F026, or F028 listings, nor is PMB dust fed to a halogen acid furnace.

In conclusion, PMB dust used as an ingredient in the manufacture of acrylic plastic sheets satisfies the criteria for exclusion from the definition of solid waste. 40 C.F.R. §261.2(e)(2). Therefore, PMB dust is not subject to regulation as a hazardous waste.

For the reasons set forth above, the recycling of PMB dust involves "use or reuse" of that material as an ingredient within the meaning of 40 C.F.R. §261.2(e)(1)(i), and thus the PMB dust is not subject to regulation as a solid (or hazardous) waste from its point of generation.

Composite would appreciate receiving written confirmation that its understanding of the regulatory status of PMB dust recycled in the manner described herein is correct. In addition, Composite would be pleased to meet with representatives of EPA to discuss in further detail the PMB recycling process. If you have any questions about the contents of this letter, or would like to arrange a meeting to discuss the Composite PMB dust recycling program, please contact either of the undersigned at the numbers listed below.

Thank you for your consideration of this matter.

Sincerely,

G. Alan Perkins
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enclosures

Footnotes

1. The plastic abrasive media may be used 40 - 80 times prior to being removed from service.
2. The facility in India was selected because no recycling facilities for acrylic plastic were found to exist in the United States. In contrast, plastics have been recycled in India since about 1955 because that country lacks primary industrial producers of plastics. Globe Plastics has itself been recycling acrylic plastic since under the current ownership since 1978, much of which is obtained from sources within the United States.
3. A process flow diagram is provided as Attachment 1.
4. A small amount of "char residue" is generated in the depolymerization step through the charring or decomposition of acrylic plastic and paint residues. Approximately one to two pounds of char residue is generated per 5,000 pounds of PMB dust processed in the furnaces. The char residue, which contains

recoverable quantities of lead, is sold to a lead smelter for metal recovery in accordance with Indian law.

5. The volume of still bottoms, consisting of various esters, is about one percent of the volume of MMA produced, and comprises only a small fraction of one percent of the fuel for the furnace.

6. Hill AFB also requested that a pre-award environmental survey of Globe Plastics be performed by the Defense Logistics Agency ("DLA"). DLA visited Globe Plastics in September, 1991, and concluded that "the Firm is environmentally responsible to recycle methacrylate plastic dust contaminated with chromium and cadmium." DLA, Environmental Survey of Globe Plastic, Bombay, India (Oct. 3, 1991) (Attachment 2).

7. See also Letter dated June 24, 1992 from Dennis R. Downs, Director, Division of Solid and Hazardous Waste, Utah DEQ, to Col. William M. Henabray, Office of the Staff Judge Advocate, Hill Air Force Base (Attachment 4).

8. Composite notes that it disagrees with the conclusion of EPA Region VIII that PMB dust is properly characterized as a "spent material." PMB dust is removed from the blasting process not because it is "contaminated," but rather because it is physically too small to abrade coatings. Although EPA has asserted in guidance that "contamination" for purposes of the definition of spent material includes physical degradation of materials, see March 24, 1994 Memorandum, Composite believes that this position is contrary to the plain meaning of the term "contaminated" and also without support in EPA's regulations. See 40 C.F.R. §261.1(c)(1) (definition of spent material limited to "contaminated" materials). PMB dust instead is properly classified as a "sludge" because it arises from the capture of acrylic plastic dust particles in the air filtration system of the blast booth. See 40 C.F.R. §§260.10, 261.1(c)(2). Nevertheless, the status of recycled PMB dust as a "sludge" or "spent material" is irrelevant because, as discussed below, that material is not a solid waste from its point of generation per 40 C.F.R. §261.2(e)(1)(i).

9. Moreover, contrary to the assertions of EPA Region VI and the Utah DEQ, the cracking of PMB dust to yield MMA monomer is not a form of "distillation." See Region VI Letter at 2; 1994 Utah DEQ Letter at 1. Cracking, or "depolymerization," involves the

"decomposition of macromolecular compounds into relatively simple compounds." McGraw-Hill, Dictionary of Scientific and Technical Terms (4th ed. 1989) at 513. In contrast, "distillation" is defined as "[the process of producing a gas or vapor from a liquid by heating the liquid in a vessel and collecting and condensing the vapors into liquids." Id. at 561. As these definitions illustrate, depolymerization and distillation are distinct processes.

10. Indeed, it makes little sense to characterize PMB dust as a solid waste by reason of the burning of MMA monomer still bottoms for energy recovery. If the still bottoms instead were disposed of (such as by means of incineration), there would be no question whether the PMB dust is subject to regulation as a solid waste by virtue of 40 C.F.R. §261.2(e)(2)(ii). Facilities such as Globe Plastics should not be penalized for engaging in the beneficial use, rather than disposal, of secondary materials resulting from production processes that use other secondary materials as ingredients. If, however, EPA determines that the burning of MMA still bottoms causes the PMB dust to be considered a solid waste, Globe Products is prepared to cease burning the still bottoms, and to instead dispose of that material off-site in accordance with applicable Indian law.

11. The use of PMB dust to manufacture acrylic plastic sheets is easily accomplished within the "75 percent" turnover requirement of 40 C.F.R. §261.1(c)(8).