Enclosure 1a

INSTRUCTIONS FOR

The Miscellaneous Metal Parts & Products Surface Coating

Data Collection Questionnaire

Prepared for

Coatings and Consumer Products Group
Emission Standards Division
Office of Air Quality Planning and Standards
United Stated Environmental Protection Agency
Research Triangle Park, North Carolina

Revised on November 20, 1998

Enclosure 1a

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GENERAL INSTRUCTIONS

Revised: 11/20/98

What are these forms?

This form (Enclosure 1) is the Data Collection Questionnaire that was developed by EPA to gather information specific to surface coating operations. Enclosure 8 is the OMB-approved generic questionnaire that was designed to cover a broad range of facility types. It is EPA's belief that Enclosure 1 will be easier for you and will provide more useful information to EPA because it is tailored to your industry.

Do I have to fill out both Enclosure 1 and Enclosure 8?

No. You have a choice of filling out either Enclosure 1 or Enclosure 8. Again, EPA believes that Enclosure 1 will be more appropriate for describing your facility.

Why did I receive these forms?

Your facility has been identified as one of over 10,000 facilities that are potentially subject to new EPA Regulations covering surface coating. The questionnaire forms in this package were designed specifically for gathering information for the development of Maximum Achievable Control Technology (MACT) Standards for the emissions of Hazardous Air Pollutants (HAPs) from the Miscellaneous Metal Parts and Products (MMPP) Surface Coating source category. MMPP is one of nine surface coating categories which are developing these regulations, as required under Section 112 of the Clean Air Act (CAA) as amended in 1990. These regulations are expected to be promulgated in November of the year 2000. The source categories that are on this schedule are listed below. The coatings in six of these categories (including MMPP) will also be subject to the regulations for Volatile Organic Compounds (VOCs) being developed under Section 183(e) of the CAA. Definitions for these categories are provided later in these instructions.

- Automobile and Light-duty Trucks*
- Fabric
- Large Appliances*
- Metal Can
- Metal Coil
- Metal Furniture*
- Miscellaneous Metal Parts and Products*
- Plastic Parts*
- Wood Building Products*

* Indicates source categories also subject to Section 183(e) requirements.

Why should I respond to this survey?

The Data Collection Questionnaire is the best opportunity for industries that will be regulated under these requirements to describe their surface coating operations and ancillary activities so that the regulations will be technically effective, logistically workable, and cost effective. It is the hope of the EPA that all targeted industries will respond in the time allotted, with information that will allow EPA to develop regulations that make sense to the industries being regulated.

To Whom were the Questionnaire Packets Sent?

The mailing list was developed following an analysis of a Screening Survey that was sent to facilities listed in databases from the EPA and State and Local agencies, from the mailing lists of trade associations, and from individual companies that have been members of the stakeholder group for this project. The Questionnaire packets

have been addressed, where possible, to the Corporate Environmental Official, and not the individual facilities for several purposes:

1) to alert corporate owners of the data collection effort and allow them the opportunity to provide a coordinated response from all of their facilities;
2) to reduce the amount of mailing to individual facilities; and
3) to ensure that individual facilities are not missed.

How do I fill out these forms?

Responses for individual facilities may be completed at the facilities themselves or from the corporate level. Regardless of how the forms are completed, there are some general guidelines that should be followed.

- Each response (one per facility/plant) should have a unique Facility Tracking Number. The initial Facility Tracking Number can be found in Enclosure 6 to the cover letter sent with this Questionnaire Packet. If you are reporting for more than one facility and need additional Facility Tracking Numbers, contact Ms. Sharnay Torrance of PES, Inc., preferably via e-mail (storranc@rtp.pes.com), or FAX (919)9410-0234, or phone (919)941-0333 ext. 285.
- Each copy of each page of a Form should have the Facility Tracking Number at the top of the page.

How do these forms fit together?

The questionnaire consists of several inter-related forms.

- Form A (Facility General Information); one form for each response.
- Form B (Material Data); one form is needed for each material (or group of similar materials) used in the facility that can contribute to the emissions of VOC or HAP. Although it is expected that most materials will be coatings, the information requested on Form B includes materials used in surface preparation, equipment cleaning, etc. The other forms will reference the material identification number that you assign each of your materials or groups of materials.
- Form C (Control Devices); one form is needed for each control device used at your facility to control emissions from surface coating.
- Form D-1 (Coating Application Equipment); one form for each coating application unit/line. Coating application units/lines may be described by one form for a one-coat system, or may require several copies to describe the equipment which applies multiple coats on a single dedicated line.
- Form D-2 (Coating Systems); one form for each “system” of coatings used and the parts that the system is used to coat. Multiple copies of each page of this two-page form may be required for complex operations and job shops.
- Form D-3 (Coating Equipment/Systems Cross Reference); correlates the equipment to the coating systems used within them.
- Form E (Surface Preparation); one form is needed for each unique surface preparation activity (preparation of parts or products prior to surface coating). If none occur at your facility, do not fill-out.
- Form F (Waste and Wastewater); one form for each response/facility. Use this form to describe the waste and wastewater handling throughout your facility. Fill out this form only if you have estimated emissions from these areas previously.
- Form PPP (Plastic Parts and Products Surface Coating); this is provided to allow facilities that coat plastic parts/products on a coating line separate from the metal parts/products to provide that information on a set of forms more specific to plastic without having to duplicate the other information being requested in the other forms in this questionnaire packet.
- Comments Sheet; use copies of this form as necessary to provide any additional detail for any response on any form. The Comments Sheet is provided at the end of this questionnaire packet.

GENERAL INSTRUCTIONS

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How do I fill out the forms if all I use are adhesives?

Please treat your adhesives as a coating; fill out a Form B (Material Data) for the adhesive, fill out a Form C (Control Device) if applicable, and fill out Forms D1 through D3 to describe the application of the adhesive.

How do I mark confidential information on these forms?

At the bottom of each form is a place for you to identify if Confidential Business Information (CBI) is included. If you indicate that CBI is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

What is the difference between venting to the building interior versus venting to the atmosphere?

This question applies to several items where the forms are asking about the fate of emission vent streams. If the vent stream is released inside the building, the assumption is that the vent stream will eventually be released to the atmosphere. By checking "vent to atmosphere," you are indicating that the vent stream is routed directly to the atmosphere.

Can I write additional details about my process in the margins of the forms?

Yes. We would prefer that you attach a Comments Sheet to provide any additional details; however, for a short comment it may be easier and more convenient to add a note in the margin next to the appropriate question.

Who should I contact if I still have questions?

Contact Person	E-mail	Telephone	FAX
For questions regarding how to fill out this questionnaire, contact:			
George Woodall, Ph.D.	gwoodall@rtp.pes.com	(919) 941-0333	(919) 941-0234
For any other questions, you may contact either of the people listed below.			
Bruce Moore	moore.bruce@epa.gov	(919) 541-5460	(919) 541-5689
Kim Teal	teal.kim@epa.gov	(919) 541-5580	(919) 541-5689

DEFINITIONS

Revised: 10/19/98

The definitions provided in this Data Collection Questionnaire were developed for use in this questionnaire only, and should not be used as replacements for the definitions of like terms used in existing regulations. EPA has tried to make these definitions as compatible with the definitions already in use for specific terms; however, the definition of many terms vary somewhat between different regulations and the definitions in this document were deemed most appropriate for this phase of the regulatory development process. It should also not be assumed that the definitions used in this questionnaire are the same definitions that will be used in any draft or final regulations that may result from this process.

Add-on control device - An air pollution control device that reduces pollution in an air stream by destruction or removal prior to discharge to the atmosphere. Examples are incinerators, condensers, carbon adsorbers, and biofiltration units. Transfer equipment and ductwork are not considered in and of themselves add-on air pollution control devices.

Add-on control device efficiency - The ratio of the (pollutant) emissions recovered or destroyed by an add-on air pollution control device to the total (pollutant) emissions that are introduced to the control device, expressed as a percentage.

Additives - Any substance added in small quantities to a coating, usually to improve properties. Examples of additives include plasticizers, fungicides, and dryers.

Adhesion promoter - A very thin coating applied to a substrate to promote wetting and the forming of a chemical bond with the subsequently applied material.

Adhesive - A substance capable of holding materials together by surface attachment. Various descriptive adjectives are used with the term adhesive to indicate certain characteristics: physical (liquid adhesive, tape adhesive), chemical type (silicate adhesive, resin adhesive), materials bonded (paper adhesive), and conditions of use (hot-set adhesive).

Aerosol coating - A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on a container is depressed.

Air-dried coatings - Coatings which are not heated above 194^{O}F (90^{O}C) for coating or drying. Air-dried coatings also include forced-air dried coatings.

Alkali - Any substance that neutralizes acids. Alkalis are helpful in aqueous cleaning by speeding soil removal and suspension. Alkali is synonymous with caustic.

Alkyd - A binder based on resins formed by the condensation of polyhydric alcohols with polybasic acids. They may be regarded as complex polyesters (Thermoset)

Amino resins - Resins used to crosslink with polyesters, epoxies, acrylics, and alkyds to enhance their durability.

As-applied - The condition of a coating at the time of application to the substrate, including any added thinning solvent. Multi-component coatings are supplied as individual components that have to be mixed prior to application.

As-supplied - The condition of a coating as purchased and delivered to the user. Multi-component coatings are supplied as separate components and later mixed according to manufacturers instructions (e.g., 1:3). The mixing ratio affects the pollutant emissions from the final coating product (i.e., the *as-applied* product).

Baked coatings - Coatings that are cured or dried in an oven at air temperatures greater than 194^{O}F (90^{O}C).

DEFINITIONS

Revised: 10/19/98

Binder - The solid (non-volatile) material in a coating that binds the pigment and additive particles together to form a film. In general, binders are resins.

Capture efficiency - The fraction of all organic vapors, HAP emissions, or other pollutants generated by a process that are directed to an add-on air pollution control device expressed as a percentage.

CARC - Chemical Agent Resistant Coatings. These polyurethane-based coatings are highly crosslinked to resist chemical attack. CARC is often used on military equipment that might become contaminated by nuclear, biological, or chemical substances.

Caulk - Material used to fill, close, or plug cracks and spaces within or between components.

Cellosolve - The generic term for the solvent family of mono-alkyl ethers of ethylene glycol. For example, a widely-used solvent is butyl cellosolve, which chemically is ethylene glycol monobutyl ether.

Chlorinated solvents - Organic solvents that contain chlorine. Examples include 1,1,1-trichloroethane and methylene chloride.

Clean (verb) - To remove foreign material from a substrate.

Clean Air Act (CAA) - The Clean Air Act, as amended in November 1990, provides the foundation for EPA's efforts to improve air quality. The Clean Air Act, building on earlier legislation, was passed in 1970.

Cleaning activity - Action used to clean a substrate. This term focuses on how the substrate is being cleaned, and includes actions such as wiping, brushing, flushing, spraying or dipping.

Cleaning operation - A unit operation in which a substrate is cleaned. This term focuses on what is being cleaned (e.g., spray booth cleaning operation or parts cleaning operation). Cleaning may be performed to prepare a surface for coating (Form E) or for other purposes (Form H).

Cleaning Solvent - Organic solvents used in surface preparation of the part or product to be coated (as reported on Form E) or in cleaning operations (as reported on Form H).

Clear coat - A transparent coating usually applied over a colored opaque coat to give improved gloss and protection to the color coat below. In some cases a clear coat simply refers to any transparent coating without regard to the substrate.

Closed Pipe - completely closed piping with no opening to the atmosphere.

Coating - A protective, decorative, or functional film applied as a thin layer to a substrate or surface and which cures to form a continuous solid film. This term applies to paints such as lacquers or enamels, but also is used to refer to films applied to paper, plastics, or foil. Adhesives and Caulks are being treated as Coatings in this questionnaire; however, these may be reported separately as an "Other" Product Type if desired.

Coating Categories: (These are source categories for which MACT has been developed or is being developed.)

> **Aerospace -** Entities potentially regulated by this action are owners or operators of facilities that are engaged, either in part or in whole, in the manufacturing or rework of commercial, civil, or military aerospace vehicles or components and that are major sources**.**

DEFINITIONS

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Automobile and Light-duty Trucks - Surface coating of automobile and light duty truck bodies at assembly plants, or other facilities and associated operations including the mixing and storage of coatings, and treatment of wastewater generated from coating operations. Off-line coating of non-body parts is not included. Other HAP- and/or VOC-using operations at assembly plants, including the application of adhesives, and fluid fills are included.

Fabric - This source category includes textile manufacturing processes with potential HAP emissions performed in the production or conversion of yarn and thread; woven, knit, and non-woven fabric; and carpet. The processes include, but are not limited to, non-woven fabric bonding, slashing, preparation, printing, dyeing, wet finishing (including carpet back coating), coating, laminating, and spot cleaning.

Large Appliances - The surface coating of Large Appliances manufactured from various metals, coiled or sheet metal, pre-coated coil, and pre-cut, powder-precoated pieces.

Metal Can - This source category includes facilities that coat or print metal cans or metal parts for any type of can (e.g., metal ends for composite cans). It includes the coating/printing of metal sheets for subsequent processing into cans or can parts, but not the coating of metal coils for cans or can parts. (Coil coating for cans and can parts is included in the Metal Coil source category.) For purposes of this data-gathering effort, this source category also includes the coating/printing of metal decorative tins, crowns, and closures (except for coil coating). Note that the coating/printing of pails and drums falls in the Miscellaneous Metal Parts and Products source category.

Metal Coil - Coil manufacturing begins with a coil or roll of bare sheet metal and ends with a coil of metal coated on one or both sides.

Metal Furniture - The surface coating of furniture manufactured from various metals.

Miscellaneous Metal Parts and Products - This category encompasses all metal parts and products not covered in one of the other categories in which the surface coating of metal parts or products are included (Aerospace, Automobile and Light-duty Trucks, Boat Manufacturing, Large Appliances, Metal Can, Metal Coil, Metal Furniture, or Shipbuilding).

Paper and Other Web - This source category includes facilities that apply coatings to a web substrate to produce a wide range of products, that include but are not limited to the following: pressure sensitive tapes and labels, photographic film, flexible packaging, decorative and industrial laminates, sandpaper and other abrasives, gaskets and other sealing devices, and wall and floor coverings. Facilities only coating fabric, however, will be covered under a separate NESHAP for fabric coating.

Plastic Parts - The surface coating of plastic parts produced by either machining from stock plastic, or casting and molding.

Printing and Publishing - This category includes printers, publishers, and manufacturers of packaging, wall and floor coverings, house furnishings and sanitary paper products employing rotogravure printing or wide-web flexographic printing technologies, etc.

Shipbuilding and Repair - This category includes shipbuilding and repair facilities that are major sources of HAP or are located at plant sites that are major sources.

Wood Building Products -The wood building products coating source category includes facilities engaged in the surface coating of flooring, shingles, awnings, doors, mantels, shutters, mouldings hardwood/softwood plywood panels, arches, trusses, manufactured homes, hardboard, particleboard, reconstituted wood panels,

wall tile, wallboard, and cementitious board. These facilities apply a protective, decorative, or functional layer (i.e., paints, stains, sealers, topcoats, basecoats, primers, enamels, inks, laminates) to the wooden substrate before final sale to distributors.

Wood Furniture - The Wood Furniture category applies to a facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source.

Coating Components - Products that are combined at the coating facility to create a coating (e.g., catalyst and resin in multi-component coatings). Thinning solvents are not included in this definition as a coating component, but are reported separately.

Coating System - (1) In a single-coat coating operation, a coating compatible with the substrate being coated. (2) In a multiple-coat coating operation (e.g., primer, basecoat, topcoat), coatings compatible with the substrate being coated and with one another. The reasons for defining coating systems used in a facility is to avoid choosing low-emission options for one type of coating (e.g., primers) that may not be compatible with the low-emitting option for another coating (e.g., basecoat).

Coating Technologies - The basic composition and chemistry of a coating. Some of these technologies are specific to the substrate being coated (Fabric-Specific Coatings), while others are based on the carrier (Solvent-borne and Waterborne), the resin used, or application technique (Electrostatic).

Dispersion coating - A type of coating in which the binder molecules are present as colloidal particles and spread uniformly throughout the formulation as a stable mixture.

Drier - An additive which accelerates the drying of coatings.

Emulsion - A two-phase liquid system in which small droplets of one liquid (the internal phase) are immiscible in, and are dispersed uniformly throughout, a second continuous liquid phase (the external phase). This contrasts with a latex, which consists of solids dispersed in a liquid.

Enamels - Coatings which are characterized by their ability to form a smooth surface; originally associated with a high gloss, but may also include a lower degree of gloss. Also a class of substances having similar composition to glass with the addition of stannic oxide, or other infusible substances to render the enamel opaque. Can be used to describe a coating which forms a film through chemical union of its component molecules during cure and in shop terminology can be used to describe paint which is not a lacquer. All paints that form crosslinking chemical bonds during curing, are considered enamels. The majority of industrial finishes fall into this category.

Epoxies - Binders based on epoxy resins. Epoxy crosslinking is based on the reaction of the epoxide groups with other materials such as amines, alcohols, phenols, carboxylic acids, and unsaturated compounds. Also used as a thermoset powder coating.

Exempt compound - Specific organic compounds that are not considered volatile organic compounds due to negligible photochemical reactivity. Exempt compounds are specified in 40 CFR 51.100(s).

Flash-off time - The time required between application of successive wet-on-wet coatings or between application and baking to allow the bulk of the solvents in the coating to rise slowly and evaporate. In baked coatings flash-off helps to prevent solvent boil off and film blistering.

DEFINITIONS

Revised: 10/19/98

Full-Time Equivalents (FTEs) - FTEs are calculated by dividing the total number of man-hours worked at a facility by the number of hours expected from a full-time employee, typically 2,000 hours/year. The equation below demonstrates a FTE calculation.

$$\frac{400{,}000\ man\text{-}hours}{2{,}000\ man\text{-}hours\ per\ FTE} = 200\ FTEs$$

Hand-wipe cleaning operation - Removing contaminants such as dirt, grease, oil, and coatings by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

HAP - Hazardous Air Pollutant. Means any air pollutant listed in or pursuant to Section 112(b) of the Clean Air Act. The current list of HAPs is provided.

Heat-resistant coatings - Designed to resist degradation upon continuous or intermittent exposures to a predetermined elevated temperature. A San Diego Air Pollution Control District rule stipulates that the coating must withstand temperatures of 400°F during normal use as determined by ASTM Method D-2485.

High volume low pressure (HVLP) spray equipment - Spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig or less of atomizing air pressure or less at the air cap.

High-solids - Solvent-borne coatings that contain greater than 50 % solids by volume or greater than 62 % (69 % for baked coatings) solids by weight.

Hydrocarbon solvent - A solvent consisting exclusively of the elements carbon and hydrogen. They are principally derived from petroleum and coal tar, and include aliphatic, aromatic, and napthenic solvent.

Hydroxides - The chemical opposites of acids. Also known as caustics and alkalis. Examples are sodium hydroxide and potassium hydroxide.

Lacquer - Coating composition based on synthetic thermoplastic film-forming material dissolved in organic solvent and dried primarily by solvent evaporation. Typical lacquers include those based on nitrocellulose, other cellulose derivatives, vinyl resins, acrylic resins, etc.

LAER (Lowest achievable emission rate) - Pursuant to Section 171(1) of the Clean Air Act, LAER is that rate of emissions which reflects:

(a) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of sources, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or

(b) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent.

In no event, however, shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance. Areas of the country that have not attained national ambient air quality standards may require LAER on new sources of pollution.

MACT - Maximum Achievable Control Technology, as specified in Section 112 of the Clean Air Act.

DEFINITIONS

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Major modifications - Include any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of VOC or HAPs. Typically, these modifications result in changes in a permit or results in the need to acquire a permit to construct.

Manufacturer's formulation data - Data on a material (e.g., a coating) supplied by the material manufacturer based on knowledge of the ingredients used to manufacture that material, rather than based on testing of the material. Manufacturers formulation data may include information on density, VOC content, HAP content, solids content, etc.

Material balance - A calculation based on conservation of mass (i.e., the mass of material going into an operation is equal to the mass of material which leaves the operation either as a part of the product, as air emissions, or as a waste). This calculation is often used to estimate volatile emissions.

Metalized epoxy coating - A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

OEM - Original equipment manufacturer.

Open Pipe (Form I - Waste and Wastewater) **-** Covered trench or pipe with openings to the open air at each end and/or through a vent, manhole, etc.

Open Trench (Form I - Waste and Wastewater) **-** An uncovered trench in which wastewater flows from point of generation to another point.

Permanent total enclosure - A permanently installed enclosure that completely surrounds a source of emissions such that all emissions are captured and discharged through a control device. For specific qualifying criteria, see Method 204 (62 FR 32500) (June 16, 1997).

Pigment - Finely ground insoluble particles dispersed in coatings to influence properties such as color, corrosion resistance, mechanical strength, hardness, durability, etc. Particles may be natural or synthetic and also inorganic or organic.

Polyester - A polymer in which the monomer units are linked by the ester functional group (-COO-). Polyester has been used as thermoplastic powder coating, and as the following thermosetting powder coatings: epoxy polyester hybrid powder, urethane polyester powder, and polyester TGIC powder.

Polyethylenes - Thermoplastic resins composed of polymers of ethylene (-CH=CH-). Polyethylenes are normally translucent, tough, waxy solids that are unaffected by water and a large range of chemicals. Frequently used in powder coatings.

Polymers - A high-molecular-weight organic compound, natural or synthetic, with a structure that can be represented by a repeated small unit.

Polypropylenes - Tough, lightweight thermoplastic resins composed of polymers of propylene (-CH=CH-CH2-). They are commonly used in powder coating.

Powder coatings - Any coating applied as a dry (without solvent or other carrier), finely divided solid which adheres to the substrate as a continuous film when melted and fused.

DEFINITIONS

Revised: 10/19/98

Primer - The first layer and any subsequent layers of identically formulated coating applied to the surface to be coated. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings.

Process (Process line) - The aggregate of physical equipment necessary for producing a product. The emissions from a process includes all sources of air emissions (e.g., storage, transfer, handling, painting, and packaging).

Resin Type - The basic chemical classification of the coating solids.

Shelf life - The length of time a coating may normally be stored without losing any chemical/physical properties. Manufacturers typically specify the shelf life.

SIC/NAICS Codes - These refer to the Standard Industrial Classification codes (1987) and their replacements, the North American Industrial Classification System codes. For more information on SIC and NAICS codes, visit the following Internet site: http://www.census.gov/epcd/www/naics.html

Silicones - Resins consisting of silicon-oxygen linkages (unlike organic resins, which contain carbon).

Sludge (Form I - Waste and Wastewater) **-** The waste solids generated from any process (surface preparation, coating, mixing, etc.) that it is necessary to have disposed, either on-site or off-site.

Solids - The nonvolatile portion of the coating that after drying makes up the dry film.

Solvent - The liquid or blend of liquids used to dissolve or disperse the film-forming particles in a coating and which evaporate during drying. Solvents can also be used for cleaning prior to or following a coating process, and for equipment cleaning. A true solvent is a single liquid that can dissolve the coating. Solvent is often used to describe terpenes, hydrocarbons, oxygenated compounds, furans, nitroparaffiins, and chlorinated solvents.

Solvent-borne - Coatings in which volatile organic compounds are the major solvent or dispersant.

Spray gun - A device that atomizes a coating or other material and projects the particulates onto a substrate.

Surface preparation - The removal of contaminants from the surface of a substrate or component or the activation or reactivation of the surface in preparation for the application of a coating.

Temporary total enclosure - An enclosure constructed only to measure the capture efficiency of pollutants emitted from a given source. For specific qualifying criteria, see Method 204 (62 FR 32500) (June 16, 1997).

Thermoplastic - Resin capable of being repeatedly softened by heat and hardened by cooling. These materials, when heated, undergo a substantially physical rather than chemical change. Thermoplastic resins can be completely dissolved with appropriate solvents.

Thermoset - Resin that, when cured by application of heat or chemical means, changes into a substantially infusible and insoluble material. Thermosetting resins will soften but will not dissolve in any solvents.

Thinning solvent - Organic solvent used to thin coating material prior to application to the part or product.

Topcoat - A coating that is applied over a primer or other previous coating applied on a part, product, or component for appearance or protection. Topcoats are typically the last coat applied in a coating system.

DEFINITIONS

Revised: 10/19/98

Touch-up and repair operation - That portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

Urethanes - Materials based on resins made by the condensation of organic isocyanates with compounds or resins containing hydroxyl groups. Categories of polyurethane coatings include: single component prereacted-urethane coatings; single component moisture-cured urethane coatings; single component heat-cured urethane coatings; two-component catalyst-urethane coatings, two-component polyurethane coatings; and one-component nonreactive lacquer-urethane solution coatings.

VOC (Volatile Organic Compound) - Any compound defined as a VOC in 40 CFR 51.100(s). This includes any organic compound other than those determined by the EPA to be an `exempt' compound.

Waste Coatings - coating materials from equipment cleaning, excess prepared coating materials, etc. that must be treated and/or disposed.

Waste Solvents - solvents that have been used in another process (surface preparation, etc.) that are collected for either recycling or disposal.

Wastewater - Any process waters or cleaning waters should be considered wastewater at the point/time they leave the process unit.

Wastewater Holding Tank - storage tank in close proximity to the point of generation which holds wastewater but does not reuse it in the process.

Waterborne coatings - Coatings in which water accounts for more than 5 weight percent of the volatile portion.

Work practice - Specific human activities that lead to a reduction in emissions (or waste) or have the potential to do so. The activities include operator training, management directives, work procedures or techniques for conducting emission (or waste) generating operations or for reducing or eliminating the need for or frequency of such operations.

LIST OF HAZARDOUS AIR POLLUTANTS

SECTION 112 HAZARDOUS AIR POLLUTANTS 7/8/96 update

"This draft list includes current EPA staff recommendations for technical corrections and clarifications of the hazardous air pollutants (HAP) list in Section 112(b)(1) of the Clean Air Act. This draft has been distributed to apprise interested parties of potential future changes in the HAP list and is informational only. The recommended revisions of the current HAP list which are included in this draft do not themselves change the list as adopted by Congress and have no legal effect. EPA intends to propose specific revisions of the HAP list, including any technical corrections or clarifications of the list, only through notice and comment rulemaking. "

Chemical Abstracts Service Number	Pollutant
75-07-0	Acetaldehyde
60-35-5	Acetamide
75-05-8	Acetonitrile
98-86-2	Acetophenone
53-96-3	2-Acetylaminofluorene
107-02-8	Acrolein
79-06-1	Acrylamide
79-10-7	Acrylic acid
107-13-1	Acrylonitrile
107-05-1	Allyl chloride
92-67-1	4-Aminobiphenyl
62-53-3	Aniline
90-04-0	o-Anisidine
1332-21-4	Asbestos
71-43-2	Benzene (including benzene from gasoline)
92-87-5	Benzidine
98-07-7	Benzotrichloride
100-44-7	Benzyl chloride
92-52-4	Biphenyl
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)
542-88-1	Bis(chloromethyl) ether
75-25-2	Bromoform
106-99-0	1,3-Butadiene
156-62-7	Calcium cyanamide
~~105-60-2~~	~~Caprolactam (Removed 6/18/96, 61FR30816)~~
133-06-2	Captan
63-25-2	Carbaryl
75-15-0	Carbon disulfide
56-23-5	Carbon tetrachloride
463-58-1	Carbonyl sulfide
120-80-9	Catechol
133-90-4	Chloramben
57-74-9	Chlordane
7782-50-5	Chlorine
79-11-8	Chloroacetic acid
532-27-4	2-Chloroacetophenone
108-90-7	Chlorobenzene
510-15-6	Chlorobenzilate
67-66-3	Chloroform
107-30-2	Chloromethyl methyl ether
126-99-8	Chloroprene
1319-77-3	Cresol/Cresylic acid (mixed isomers)
95-48-7	o-Cresol
108-39-4	m-Cresol
106-44-5	p-Cresol
98-82-8	Cumene
	2,4-D (2,4-Dichlorophenoxyacetic Acid, including salts and esters)
72-55-9	DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)
334-88-3	Diazomethane
132-64-9	Dibenzofuran
96-12-8	1,2-Dibromo-3-chloropropane
84-74-2	Dibutyl phthalate
106-46-7	1,4-Dichlorobenzene
91-94-1	3,3'-Dichlorobenzidine
111-44-4	Dichloroethyl ether (Bis[2-chloroethyl]ether)
542-75-6	1,3-Dichloropropene
62-73-7	Dichlorvos
111-42-2	Diethanolamine
64-67-5	Diethyl sulfate

LIST OF HAZARDOUS AIR POLLUTANTS

119-90-4	3,3'-Dimethoxybenzidine
60-11-7	4-Dimethylaminoazobenzene
121-69-7	N,N-Dimethylaniline
119-93-7	3,3'-Dimethylbenzidine
79-44-7	Dimethylcarbamoyl chloride
68-12-2	N,N-Dimethylformamide
57-14-7	1,1-Dimethylhydrazine
131-11-3	Dimethyl phthalate
77-78-1	Dimethyl sulfate
	4,6-Dinitro-o-cresol (including salts)
51-28-5	2,4-Dinitrophenol
121-14-2	2,4-Dinitrotoluene
123-91-1	1,4-Dioxane (1,4-Diethyleneoxide)
122-66-7	1,2-Diphenylhydrazine
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)
106-88-7	1,2-Epoxybutane
140-88-5	Ethyl acrylate
100-41-4	Ethylbenzene
51-79-6	Ethyl carbamate (Urethane)
75-00-3	Ethyl chloride (Chloroethane)
106-93-4	Ethylene dibromide (Dibromoethane)
107-06-2	Ethylene dichloride (1,2-Dichloroethane)
107-21-1	Ethylene glycol
151-56-4	Ethyleneimine (Aziridine)
75-21-8	Ethylene oxide
96-45-7	Ethylene thiourea
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)
50-00-0	Formaldehyde
76-44-8	Heptachlor
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
	1,2,3,4,5,6-Hexachlorocyclyhexane (all stereo isomers, including lindane)
77-47-4	Hexachlorocyclopentadiene
67-72-1	Hexachloroethane
822-06-0	Hexamethylene diisocyanate
680-31-9	Hexamethylphosphoramide
110-54-3	Hexane
302-01-2	Hydrazine
7647-01-0	Hydrochloric acid (Hydrogen chloride [gas only])
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)
123-31-9	Hydroquinone
78-59-1	Isophorone
108-31-6	Maleic anhydride
67-56-1	Methanol
72-43-5	Methoxychlor
74-83-9	Methyl bromide (Bromomethane)
74-87-3	Methyl chloride (Chloromethane)
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)
78-93-3	Methyl ethyl ketone (2-Butanone)
60-34-4	Methylhydrazine
74-88-4	Methyl iodide (Iodomethane)
108-10-1	Methyl isobutyl ketone (Hexone)
624-83-9	Methyl isocyanate
80-62-6	Methyl methacrylate
1634-04-4	Methyl tert-butyl ether
101-14-4	4,4'-Methylenebis(2-chloroaniline)
75-09-2	Methylene chloride (Dichloromethane)
101-68-8	4,4'-Methylenediphenyl diisocyanate (MDI)
101-77-9	4,4'-Methylenedianiline
91-20-3	Naphthalene
98-95-3	Nitrobenzene
92-93-3	4-Nitrobiphenyl
100-02-7	4-Nitrophenol
79-46-9	2-Nitropropane
684-93-5	N-Nitroso-N-methylurea
62-75-9	N-Nitrosodimethylamine
59-89-2	N-Nitrosomorpholine
56-38-2	Parathion
82-68-8	Pentachloronitrobenzene (Quintobenzene)
87-86-5	Pentachlorophenol
108-95-2	Phenol
106-50-3	p-Phenylenediamine
75-44-5	Phosgene

LIST OF HAZARDOUS AIR POLLUTANTS

7803-51-2	Phosphine
	Phosphorus Compounds
85-44-9	Phthalic anhydride
1336-36-3	Polychlorinated biphenyls (Aroclors)
1120-71-4	1,3-Propane sultone
57-57-8	beta-Propiolactone
123-38-6	Propionaldehyde
114-26-1	Propoxur (Baygon)
78-87-5	Propylene dichloride (1,2-Dichloropropane)
75-56-9	Propylene oxide
75-55-8	1,2-Propylenimine (2-Methylaziridine)
91-22-5	Quinoline
106-51-4	Quinone (p-Benzoquinone)
100-42-5	Styrene
96-09-3	Styrene oxide
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin
79-34-5	1,1,2,2-Tetrachloroethane
127-18-4	Tetrachloroethylene (Perchloroethylene)
7550-45-0	Titanium tetrachloride
108-88-3	Toluene
95-80-7	Toluene-2,4-diamine
584-84-9	2,4-Toluene diisocyanate
95-53-4	o-Toluidine
8001-35-2	Toxaphene (chlorinated camphene)
120-82-1	1,2,4-Trichlorobenzene
79-00-5	1,1,2-Trichloroethane
79-01-6	Trichloroethylene
95-95-4	2,4,5-Trichlorophenol
88-06-2	2,4,6-Trichlorophenol
121-44-8	Triethylamine
1582-09-8	Trifluralin
540-84-1	2,2,4-Trimethylpentane
108-05-4	Vinyl acetate
593-60-2	Vinyl bromide
75-01-4	Vinyl chloride
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)
1330-20-7	Xylenes (mixed isomers)
95-47-6	o-Xylene
108-38-3	m-Xylene
106-42-3	p-Xylene
	Antimony Compounds
	Arsenic Compounds (inorganic including arsine)
	Beryllium Compounds
	Cadmium Compounds
	Chromium Compounds
	Cobalt Compounds
	Coke Oven Emissions
	Cyanide Compounds (1)
	Glycol ethers (2)
	Lead Compounds
	Manganese Compounds
	Mercury Compounds
	Fine mineral fibers (3)
	Nickel Compounds
	Polycyclic Organic Matter (4)
	Radionuclides (including radon) (5)
	Selenium Compounds

NOTES: Blank Chemical Abstracts Service (CAS) Numbers indicate that more than one CAS Number is possible for that pollutant. For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

(1) X'CN where X = H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)2.

(2) Under review. Glycol Ether definition draft options:

LIST OF HAZARDOUS AIR POLLUTANTS

Possible Correction to CAA 112(b)(1) footnote that would be consistent with OPPTS modified definition. New OPPTS definition as published is: R - (OCH2CH2)n - OR' where:

n = 1,2, or 3
R = alkyl C7 or less
or R = phenyl or alkyl substituted phenyl
R' = H or alkyl C7 or less
or OR'= carboxylic acid ester, sulfate, phosphate, nitrate or sulfonate

CAA Glycol ether definition exactly as in the statute (errors included):"Includes mono- and di ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH2CH2)n-OR' where

n = 1,2, or 3
R = alkyl or aryl groups
R' = R,H or groups which when removed, yield glycol ethers with the structure R-(OCH2CH)n-OH. Polymers are excluded from the glycol category.

CAA Glycol ether definition with technical correction made. (A 2 was left out of the last formula): "Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH2CH2)n -OR' where

n = 1, 2, or 3
R = alkyl or aryl groups
R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH2CH2)n-OH. Polymers are excluded from the glycol category.

(3) Under Review

(4) Under Review

(5) A type of atom which spontaneously undergoes radioactive decay.

LIST OF HAZARDOUS AIR POLLUTANTS

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FORM A - GENERAL FACILITY INFORMATION

Revised 11/20/98

The purpose of this form is to provide information regarding each individual facility in your organization which has surface coating operations in one or more of the categories defined in the General Instructions, but most specifically for the surface coating of Miscellaneous Metal Parts and Products (MMPP).

Instructions for each item or groups of items are provided below to assist in filling in responses. All items on Form A are to be considered to be critical and should be completed if the information is known. If the information is not known, mark the response with "Unknown," do not leave items blank.

Most items in Form A may be completed before answering other forms, except for Item A-14, which should be answered only after all other forms in a response have been completed.

What if I am reporting for more than one facility?

If you are reporting for more than one facility, a separate response should be completed for each individual facility, and a unique tracking number should be used with each facility. Each response (one per facility/plant) should have a unique Facility Tracking Number. The initial Facility Tracking Number can be found in Enclosure 6 to the cover letter sent with this Questionnaire Packet. If you are reporting for more than one facility, contact Ms. Sharnay Torrance of PES, Inc. to acquire additional Facility Tracking numbers, preferably via e-mail (storranc@rtp.pes.com), or FAX (919)9410-0234, or phone (919)941-0333 ext. 285.

Do you want me to identify all of the thousands of products I coat?

No. In item A-5, please list the groups of products that you coat, along with their Standard Industrial Classification (SIC) or North American Industrial Classification System (NAICS) Code. You can group your products by SIC/NAICS Code or by any other method you deem appropriate. Grouping of products is also encouraged in Form D2, and the approach taken to grouping of products in Form A should be followed in Form D2; therefore, it may be advantageous to review Form D2 before completing item A-5.

What if 1997 is not a representative year for my facility?

In item A-8, please indicate a representative year for your facility. If 1997 was unusual for some reason (for example, you spent 6 months off-line while a modification was being made), then provide a representative year and attach a Comments Sheet explaining the situation.

Item-Specific Instructions

Facility Tracking Number: See General Instructions and introductory text above.

A-1. **Facility Name:** Enter the legal name for this facility.

A-2. **Location Address:**

a) **Street:** The street address for the main entrance to the facility.

b) **City:** The city in which the facility is located.

c) **State:** The State in which the facility is located.

d) **Zip Code:** The 5- or 9-digit zip code for the facility location.

e) **County:** The county within the State in which the facility is located. For example, enter "Wake" for Wake County in North Carolina.

A-3. **Parent/Corporate Owner**: Please provide information on the parent company/corporation, either foreign or domestic, which owns the facility. If the "owner" of the facility is in turn "owned" by a parent company/corporation please provide information for that parent company/corporation. If owned by a Government Agency (e.g., U.S. Army) please indicate that Agency as the owner.

a) **Name of Corporate Owner:** The corporate owner of the facility.

b)- e) **Mailing Address:** The Corporate mailing address. Please provide a domestic (United States) address, if possible.

f) **Total Number of Corporate Employees:** Total number of corporate employees, both foreign and domestic.

A-4. **Facility Description**

a) Provide a brief description of the facility, including general purpose, types of processes that are performed at this location, products made, and other information discussing the operations of the facility. Please provide additional details on a Comment sheet for this form, if necessary.

b) **Dun & Bradstreet Number:** The 9-character Dun & Bradstreet identifier for this facility. If unknown enter "Unknown."

c) **SARA TRI Facility ID:** The SARA TRI Facility ID number that is used for reporting to EPA for the Toxic Release Inventory. This information allows EPA to cross-reference the TRIS database. If this facility does not have a TRI Facility ID, enter "None."

d) **Number of Facility Employees:** The number of production personnel employed at the facility in Full-Time Equivalents (FTEs). FTEs are calculated by dividing the total number of man-hours worked at a facility by the number of hours expected from a full-time employee, typically 2,000 hours/year. The equation below demonstrates an FTE calculation.

$$\frac{400{,}000\ man\text{-}hours}{2{,}000\ man\text{-}hours\ per\ FTE} = 200\ FTEs$$

e) **Number of Facility Coating Employees:** Total facility production employees (FTEs) involved in coating operations. See the explanation of FTE for Item A-4d. If an employee's duties are split between coating and other duties, use the proportion of hours spent on the coating line to calculate FTEs.

f) **Frequency of Coating Operation Modifications:** (Note: The definitions provided here for "Modification," "Construction, " and "Reconstruction" apply only to this data collection effort, and do not change the definitions used in Section 112 of the CAA.) Number of years between modifications to coating operation process equipment or construction of new process units. The term Modification refers to "any physical change in, or change in the operation of" equipment used in surface coating, regardless of whether emissions increased, decreased, or stayed the same. Additionally, Construction of a new process or production unit at an existing facility, or Reconstruction of an existing process or production unit should be considered a Modification for this data collection effort. Modifications do not include routine

maintenance nor replacement of worn-out, minor components (e.g., spray guns) with similar equipment. This information is being collected to analyze potential economic impacts on industry.

g) Indicate the year the most recent modification to coating operation equipment occurred (Refer to item A-4f).

h) **Research and Development:** R&D is defined as "research and development into new processes and products, where the R&D is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner." For example, R&D could include bench scale laboratory work, pilot plants, equipment testing, testing on the production line where the specific purpose of the testing is to create or improve processes and products, and the use of batch processes run for experimental purposes. Please answer "yes" if any activities conducted at the facility could be considered R&D, even if the activities are a small part of the total operations. If you believe the answer is "no," but are not sure, answer "unsure."

A-5. **Product Description:** The principal product lines/types made or serviced at this facility. General descriptions such as "Automotive Parts" are acceptable.

Industry Classification Codes (SIC/NAICS): Please provide either code for each product line/type. These refer to the Standard Industrial Classification codes (1987), and their replacements, the North American Industrial Classification System codes. For more information on SIC and NAICS codes, visit the following Internet site: http://www.census.gov/epcd/www/naics.html

End-Use Product: Check either the "Yes" or "No" check-box. If the principal product will be sold on the market as a finished good, answer "Yes;" if this product is an intermediate in the manufacture of a final product, answer "No." If the product is an "intermediate," please note on a Comments sheet the part name and the final product(s) in which the intermediate product manufactured in this facility is used. Packaging products, such as cans or wrappers, will be considered a finished product if they are ready to be used or filled.

Product Life Expectancy: How long is the final product expected to last after being acquired by the end-user? For disposable products, such as containers, enter zero if they are discarded after one use.

A-6. **Technical Contact**

a) **Name:** The name of the person (either for the Corporate Owner or for the individual facility) who is knowledgeable about technical information for the facility (emissions, control devices, coatings, processes, etc.) and should be consulted if questions arise in analysis of this response.

b) **Title:** The position title of the technical contact for this facility.

c) **Telephone:** The telephone number of the technical contact for the facility.

d) **Facsimile:** The facsimile number for the technical contact for the facility.

e) **E-mail Address:** If available, please provide an Internet e-mail address for the technical contact.

A-7. **Geographic Coordinates:** If known, please provide the latitude and longitude for the center of the facility, indicating degrees, minutes, and seconds.

FORM A - GENERAL FACILITY INFORMATION

Revised 11/20/98

A-8. **Reporting Year:** The year of record associated with the reported information for the plant. Data for the year 1997 is expected; please provide an explanation on a Comments Sheet for this form to describe why another year was chosen if 1997 was not used. Also indicate whether information is being reported for the fiscal year or calendar year.

A-9. **Surface Coating Category:** Check the box(es) to indicate the industry(ies) for which any surface coating operations are associated at this location. Please refer to the definitions of the categories provided at the beginning of this set of instructions.

A-10. **Other Regulatory Requirements:**

a) Please list all other air pollution regulatory programs (NSPS, other MACT Standards, etc.) that are applicable to this facility. If there are none, enter "None."

b) **LAER Determinations:** Indicate if a LAER determination has been made on any of the surface coating operations, and if so the date of the most recent LAER determination. Please also list on a Comments sheet for this form the coating operation(s) affected and the appropriate date(s).

A-11. **Title V Classification:** Indicate if your facility has submitted or is preparing an application for a Title V Permit from your State or local regulatory agency. If you are not sure, check the box marked "Unknown." Also provide a brief description of the basis for determining the Title V classification (e.g., for which pollutant(s) is the facility a major source) and whether or not any co-located activities (activities other than surface coating) at the facility influence the Title V status.

A-12. **Facility Emissions:** Please list the total actual emissions from the entire facility (from all operations, not just coating operations) for the reporting year. Provide facility-wide totals for: VOC, and total HAPs. Please refer to the general instructions for the list of HAPs and for a definition of hazardous air pollutant (HAP). Also provide facility-wide permit limitations (if any) on emissions of any HAP or VOC. You may use a Comments Sheet to clarify your response.

A-13. **Pollution Prevention:** Please indicate whether a) alternatives to solvent-based cleaners; b) alternative solvents; and/or c) alternative housekeeping or work practices have been investigated for this facility, then provide a brief assessment of the potential for implementing those alternatives. If they have been implemented, please indicate.

A-14. **Response Summary:** Indicate in the table how many of each Form were completed for the subject facility. This should be filled out only after the other forms have been completed. There may be instances where the quantity will be zero for certain forms (e.g., Form E, if no surface preparation takes place at your facility). Other forms (most notably, Forms B through D-3) will need to be completed for each material used, control device, and/or coating application line, and the response will consist of multiple copies of those forms. There should only be one copy of Form A for a single response (one response per facility). One corporate entity may, however, be responsible for reporting on more than one facility, and each should be treated as a separate response.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on Form A, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

FORM B - MATERIAL DATA

Revised: 10/21/98

The purpose of this form is to gather information on the materials being used in the surface coating operations, and those operations associated with surface coating at the facility. All information should be provided on an as-supplied basis, as it is received from the supplier/manufacturer. EPA is requesting that facilities provide information on all materials that represent at least 90% of the material usage within any one "Material Type," as defined under Item B-1d below. Individual respondents may feel the need to report the usage for certain "specialty" materials for which they feel a need for special consideration; please note in a **Comments Sheet** for this form if there are any special considerations for usage of a particular material.

This form has been designed to contain information for a single material or group of materials (see discussion that follows on grouping materials). It is intended that a photo-copy of an original (preferably with the Facility Tracking Number previously entered) be filled out separately for each material/material group being reported. Please note at the top of each page the Material Number and total number of Materials in the response packet for this facility; this will be used to verify that all information provided in the response has been received.

Do not send Product Sheets, MSDS's, etc. in place of Form B. Provide all information requested using Form B.

Rules for Grouping Materials

The option is being given to respondents to group like materials (e.g., different color coatings with similar VOC and HAP content), and report information on the grouped materials on a single Form B. However, there are some limitations on which materials may be grouped with one another.

- All materials within a group must have a similar formulation, not varying from one to another by more than 10% in Total VOC or 10% in Total HAP.
- Only materials of the same type can be grouped together (e.g., Coatings/Coating Components separate from Cleaning Solvents and Thinning Solvents).
- Only coatings of the same resin-type or coating technology may be grouped together.
- All materials in the group must use the same Units of Measure (either mass units or volume units) or be converted prior to being combined.
- Details given as ranges, such as the density of the product, weight-percent or volume-percent VOC, etc., should not vary by more than 10% from one another for those values (either the minumum or the maximum) from other products in the group. The absolute minimum and maximum values for products in the group should be entered (i.e., enter the lowest minimum and the highest maximum, taking into consideration the 10% difference stated in the previous sentence).
- Provide individual product-specific details (e.g., manufacturers, stock numbers, etc.) on a Comment Sheet for each product being grouped and enter "See Comments" for those items on Form B.

How do I fill out Form B for a multi-component coating?

As an example, consider a coating with a thinner and a catalyst that must be added prior to use. Complete a Form B for the thinner (Material ID Number MN-100) and a separate Form B for the catalyst (MN-200) as they are supplied to you. You will then define the multi-component coating under Form D2, item D2-3, indicating the amount of each component used within a coating system (see definitions and instructions to Form D2 for more discussion of coating systems).

Can I just send you a spreadsheet or a printout with the data you are requesting?

No. It is essential for our data entry and quality control purposes that you fill out Form B. You may provide printouts if the format of the printout exactly matches that of Form B.

FORM B - MATERIAL DATA

Revised: 10/21/98

Can I group materials if the speciated components are not identical?

Yes. However, a group of materials or a group of coatings must still vary by no more than 10 percent in total HAP and no more than 10 percent in total VOC (weight percent). If the members of your group of coatings contain different speciated components, you must list all of the components that appear in the group of coatings; provide a volume-weighted average weight percent content for each component.

Item-Specific Instructions

Material Number: This will be assigned by the respondent, starting with one (MN-001) for the first and going on in sequence for each product or product group being reported. Also indicate the total number of materials/material groups being reported.

B-1. **Material Identification** - This information is being requested to define the material or group of materials that will be reported upon in other forms. Indicate by the check boxes whether you are reporting for a Single Material or a Group of Materials.

a) **Product/Group Name:** The name of the material (brand names are acceptable) or group of materials.

b) **Name of Manufacturer(s)/Supplier(s):** Report the name of the manufacturer or supplier listed on the product label and/or on the MSDS for this product. If grouping like materials from more than one manufacturer or supplier, enter "Grouped Materials - Various," and note the names, manufacturer/supplier names, and stock numbers for all grouped materials on a separate **Comments** form.

c) **Manufacturers/Suppliers Stock Number:** Enter the Stock Number listed on the product package by the manufacturer or supplier. This information will be used in communicating with the product manufacturer if that becomes necessary.

d) **Product Type:** Indicate to which of these broad categories of products this specific material or group of materials belongs. (See the definitions previously provided.) If a Coating/Coating Component, also indicate whether the material is used as primer, base coat, etc. in item B-4a, and use these coating-specific types for grouping purposes.

B-2. **Material Usage**

a) **Annual Amount Used:** Give the quantity of the material used for the reporting year indicated on Form A. Please specify what unit of measure is being reported (gallons, liters, pounds, tons, or kilograms).

b) **Is material thinned, mixed, or formulated before or during use?** If the material is modified before or during use (e.g., combined with other components to form a final coating), please indicate here.

B-3. **General Composition/Formulation Data** - This information is being collected to determine the contribution of the material to the emissions of VOC and HAPs, and to allow comparisons between similar materials. If you are reporting on a group of materials, please provide the range of values (minimum and maximum).

a) **Source of Data:** Indicate the source of the data being reported in Items B-3, B-4 and B-5. The preference for data sources are Test data first, followed by Certified Product Data Sheets; Material Safety Data Sheets (MSDS); then any other data sources available. If no good source of data is available, please be certain that you have identified the manufacturer/supplier and their stock number (Items B-1b and B-1c, respectively).

b) **Material Density:** Product density is needed to convert from volume measures (e.g., gallons) to mass units by using weight-percents. Please specify either pounds/gallon or kilograms/liter as the unit of measure.

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c) **Solids Content:** Report the solids content on both a weight-percent and volume-percent basis. This information has been used in other MACT Standards (lb HAP/lb coating solids). Spaces have been provided for a minimum and maximum value; if you have a single, discrete value, enter that as both the minimum and the maximum.

d) **Total VOC Content:** Report the VOC content on a weight-percent and volume-percent basis. Spaces have been provided for a minimum and maximum value; if you have a single, discrete value, enter that as both the minimum and the maximum.

B-3. e) **Water Content:** Indicate the weight-percent and volume-percent of water in the product. Spaces have been provided for a minimum and maximum value; if you have a single, discrete value, enter that as both the minimum and the maximum.

B-4. **Coating-Specific Details** - Please provide these details to better compare like materials, indicating: a) the Coating Type; b) the Coating Technology, and c) the Resin-Type. Note the definitions provided in the General Instructions.

B-5. **Speciated Components** - List each individual organic constituent of the material (HAPs or VOCs) that are expected to be emitted from coating application, drying, or curing. Do <u>not</u> include components that are part of the coating solids and will not evaporate or otherwise become an airborne emission. List all that are present at greater than one-percent. This information should be readily available from the preferred data source (indicated in Item B-3a) or should be attainable from the manufacturer or supplier of the material. Spaces have been provided for Minimum and Maximum values when ranges are reported by the manufacturer; if a single, discrete number is given, enter that value as <u>both</u> the minimum and the maximum. It is critical that a CAS Registry Number be given when one is available; this will allow EPA to ensure that adjustments can be made for any VOC or HAP component that may be delisted in the future, and avoid the need for another data collection effort (i.e., sending you another questionnaire). A good reference on the Internet for finding CAS Registry Numbers is ChemFinder© (http://chemfinder.camsoft.com/). Also note whether this individual constituent has been considered as a HAP or VOC in this response.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on this Form B, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

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FORM C - ADD-ON CONTROL DEVICES

Revised: 10/21/98

Use this form to report information on the design parameters and capture and control efficiency from each control device. Complete one form for each control device. The General Information section (items C-1 to C-3) should reflect actual operating conditions and be completed for all control devices. For the subsequent sections (items C-4 to C-11), complete only the section which corresponds to the type of control device being reported. The Other Control Device section (item C-11) should be completed only if this particular control device is not listed in any of the previous sections. A complete description of your control device may include other parameters not on this form. It is important that you attach manufacturer's specification, schematics, and any other drawings necessary to describe this control device and its relationship to its emission source(s), if necessary.

In some situations, the operating parameters (e.g., control device efficiency, inlet flow rate) vary over a range during normal facility operations. Please report the range over which each parameter varies. You may wish to document how this variation affects control device performance in a Comments Sheet.

Please note at the top of each page the ID number and the total number of control devices in the response packet for this facility. The number of Forms will be used to verify that all information provided in the response has been received.

How do I fill out Form C for a filter on a spray booth?

A filter on a spray booth (or any other method employed to capture particulate matter and overspray from a coating operation) is better handled on Form D1. Item D1-3 provides a data column for you to identify the type of particulate matter or overspray control used in each of your spray booths. Form C should be used for any stand-alone, add-on control devices (for example, incinerators or carbon adsorbers).

Item-Specific Instructions

Control Device ID: This should be assigned by the respondent to uniquely define each specific add-on control device, beginning with one (CD-001). Each device should be described on a separate copy of the form and assigned a unique ID.

C-1. **General Information**

a) **Position in Series of Controls** - If there are several devices operating in a series, indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the #1 of 2 units.

b) **Describe Control System -** Give a brief description of the control device. Include such information as other devices used in conjunction with this device; number of compartments, etc.

c) **Pollutant(s) Collected -** Enter the pollutants being collected. If speciated data are not available, then enter total VOC and total HAP.

d) **Control Device Efficiency** - Enter the control device efficiency (in percent) for each pollutant collected.

e) **Inlet Flow Rate -** Enter the actual air flow rate entering the control device during normal operation. Please indicate units of measure (either cubic feet per minute or cubic meters per minute).

f) **Pressure Drop min/max** - Enter the minimum and maximum operating pressure drop across the device during normal operation needed to maintain the desired efficiency. Please indicate units of measure (either inches of water or kilo-pascals).

g) **Inlet Temperature min/max** - Enter the minimum and maximum inlet temperature during normal operation. Please indicate units of measure (either degrees Fahrenheit or degrees Celsius).

FORM C - ADD-ON CONTROL DEVICES

Revised: 10/21/98

C-2. **Basis of Capture and Control Device Efficiency** - Describe the basis used to determine the capture efficiency and control device efficiency (e.g., source test, manufacturer's specifications, engineering judgement, etc.).

C-3. **Monitoring** - Describe the monitoring performed on this control device to assure compliance with a regulatory or permit limit. Include the frequency at which the monitoring is performed, the parameter being monitored, and averaging time (if applicable).

C-4. **Fabric Filter** - Use this section for fabric filters. A fabric filter removes particulates from a gas stream by passing the stream through a porous fabric (e.g., bagfilter, baghouse, HEPA filter). Dust particles form a more or less porous cake on the surface of the fabric.

a) **Filter Surface Area** - The total filter surface area, rounded off to nearest whole number. Please indicate units of measure (either square feet or square meters).

C-5. **Electrostatic Precipitator** - Use this section for electrostatic precipitators (ESP). An ESP removes particulate matter from a gas stream by passing the gas stream through discharge electrodes and collection plates. Most particulates become charged and are collected on the plates.

a) **Ash Analysis** - Enter the Mass Mean Diameter of the inlet particle distribution (micrometers), and the resistivity (ohm-cm) of the particles.

b) **Type** - Check the appropriate description for the type of ESP used. If none of the choices adequately describes this ESP, then check "Other" and provide a description on the Comments Sheet.

C-6. **Thermal or Catalytic Incinerator** - Use this section for thermal or catalytic incinerators. A control device which operates by thermal (non-catalytic) or catalytic incineration can oxidize hydrocarbons and/or toxic pollutants into carbon dioxide and water. Temperature and residence time must be sufficient to obtain the desired oxidation results

a) **If Catalyst Used**
Type - Enter the type of catalyst material (e.g., palladium on ceramic honeycomb design).
Catalyst Space Velocity - Enter the catalyst space velocity and units of measure. This is the volumetric gas rate divided by the volume of catalyst (this should be available from the manufacturer).

b) **Inlet Oxygen Content (%)** - The amount of oxygen in the inlet stream, expressed as a percentage.

c) **Inlet Moisture Content (%)** - Give the maximum percentage of moisture in the inlet emission stream.

d) **Residence Time** - Enter the amount of time (in seconds) the inlet gas remains in the control device before being released.

e) **Fuel Used** - Enter the type(s) of fuel(s) used in the device.

f) **Actual Hourly Fuel Use** - Indicate the actual average hourly amount of fuel consumed during the reporting year. Include units for your response.

g) **Combustion Temperature** - Enter the minimum temperature and units (either degrees Fahrenheit or degrees Celsius) in the combustion chamber during normal operation.

h) **Total Maximum Firing Rate** - Enter the total maximum firing rate and units of measure (either BTUs or joules per hour) for all burners based on input.

C-7. **Mechanical Collector** - Use this section for mechanical collectors, such as settling chambers, cyclones, and multicyclones, that utilize gravity and inertia to separate particulates from a gas stream.

Particle Density - Enter the average particle density entering the control device and units of measure (either pounds per cubic foot or kilograms per cubic meter).

C-8. **Carbon Adsorber** - Use this section for carbon adsorbers. Adsorption is a control method where gaseous pollutants are extracted from the gas phase and concentrated at the surface of a solid. Carbon is commonly used to adsorb volatile organic compounds from an airstream. If an adsorbent other than carbon is used, complete this form but explain the specifics of the control device, including the adsorbent used, on the Comments Sheet.

a) **Volatile Concentration Entering Unit** - Specify the total VOC concentration of the gas stream entering the adsorber (parts per million by volume).

b) **Breakthrough Capacity** - Provide the breakthrough capacity and units of measure (e.g., kilograms of vapor per kilogram of adsorbent). This is the capacity of the bed at which unreacted vapors begin to be exhausted.

c) **Number of Carbon Beds** - Enter the total number of carbon beds in the system, including any beds used as standby or backup.

d) **Describe Carbon Regeneration Procedure and How Emissions Are Controlled During Regeneration** - Describe the procedure used to regenerate the carbon, including disposition of recovered solvent. Also describe any method used to capture and control emissions produced from the regeneration of the adsorbent.

C-9. **Packed or Plate Column Absorbers** - Use this section for packed or plate column absorbers where one or more selected gaseous pollutants are removed by absorption by bringing the pollutants in contact with a liquid. Packing material or plates are used to increase the surface area on which this contact occurs.

a) **Type of System** - Specify type of gas absorbing system used (e.g., spray tower, cyclone spraychamber, packed columns, plate columns, venturi scrubber, sparging tank).

Plate column systems are a staged operation on plates or trays where the liquid and gas are contacted in stepwise fashion in the vertical cylinders. Packed column systems are a continuous operation where the gas and liquid phases flow through the system in a continuous manner with intimate contact throughout.

Packed/Plate Column Parameters - Complete sections 8b through 8d only if the absorbing system is classified as a packed or plate column system.

b) **Column Length** - Enter the length and units of measure (either feet or meters) of the packed column.

c) **Column Diameter** - Enter the column diameter and units of measure (either feet or meters).

d) **Type of Packing Used** - Specify packing used in your packed tower (e.g., partition tricklers, pall rings, berl saddles, tellerettes).

e) **Plate Spacing** - Enter the distance and units of measure (either inches or centimeters) between the plates in the absorbing tower. (Plate columns only.)

f) **Total Gas Pressure** - Specify the total inlet gas pressure and units of measure (either PSI or kilo-pascals).

g) **Gas Dew Point** - Enter the temperature at which the gas stream first changes into liquid phase. Please indicate units of measure (either degrees Fahrenheit ir degrees Celsius).

h) **Gas Velocity** - Enter the maximum gas velocity through the net column cross-sectional area and indicate units of measure (either feet per second or meters per second).

i) **Additive Liquid Scrubbing Medium** - Specify what kind of liquid is used. Include the name of the additives (e.g., propanol, detergents, etc).

j) **Percent Recirculated** - If the absorber is operated with recirculating slurries, specify the percentage of the liquid returned to the system.

k) **Total Liquid Injection Rate** - Enter the total volumetric flow rate of the liquid. Please indicate units of measure (either gallons per minute or liters per minute).

l) **Make-up Rate** - Specify the amount of new liquid that must be added to the system due to evaporation or discharge to a disposal system. Please indicate units of measure (either gallons per minute or liters per minute).

m) **Additive** - Specify the amount of new additive(s) that must be added to the system due to evaporation or discharge to a disposal system. Please indicate units of measure (either gallons per minute or liters per minute).

C-10. **Wet Scrubber** - Use this section for wet scrubbers that are used to separate particulates (sometimes gases) from an airstream. Scrubber liquids are introduced for particle collection.

a) **Additive Liquid Scrubbing Medium** - Specify what kind of liquid is used. Include the name of the additives (e.g., propanol, detergents, etc).

b) **Total Liquid Injection Rate** - Enter the total volumetric flow rate of the liquid. Please indicate units of measure (either gallons per minute or liters per minute).

c) **Make-up Rate** - Specify the amount of new liquid that must be added to the system due to evaporation or discharge to a disposal system. Please indicate units of measure (either gallons per minute or liters per minute).

d) **Additive Rate** - Specify the amount of new additive(s) that must be added to the system due to evaporation or discharge to a disposal system. Please indicate units of measure (either gallons per minute or liters per minute).

C-11. **Condenser** - Use this section for condensers that are used to remove organic compounds by cooling the gas stream and condensing out the pollutants.

a) **Temperature of Inlet Coolant** - Enter the temperature of the coolant entering the condenser. Please indicate units of measure (either degrees Fahrenheit or degrees Celsius).

b) **Temperature of Condensation** - Enter the temperature of the condensed pollutant. Please indicate units of measure (either degrees Fahrenheit or degrees Celsius).

c) **Refrigeration Capacity** - Enter the capacity of the condenser. Please indicate units of measure (either BTUs or joules per second).

C-12. **Other Control Device** - Use this form to describe any control device not included in one of the above sections. Use the Comments Sheet to provide additional information, if necessary.

a) **Filter Media** - Enter the type of filter media used, if applicable.

b) **Collection Surface Area** - Enter the area of filter media, if applicable. Please indicate units of measure (either square feet or square meters).

c) **Fuel Used** - Enter the type(s) of fuel(s) used in the device.

d) **Fuel Usage Rate** - Enter the maximum fuel usage rate on an hourly or annual basis. Provide units for your response.

e) **Describe Any Auxiliary Materials Introduced into the Control System** - Describe any auxiliary materials (e.g., lime, caustic, acid, etc.) introduced into the control system.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

FORM D1 - COATING APPLICATION EQUIPMENT

Revised: 10/19/98

The purpose of this form is to provide information regarding equipment used in the coating of miscellaneous metal parts and products in your facility. This information will be cross-referenced with information on Coating Systems (Form D2) in Form D3. Please review all three of these forms before entering information on Form D1.

Please use this form to define the smallest set of equipment that can operate on an independent basis. It may be necessary to use more than one copy of this form to describe a single coating application line consisting of several separate coating areas/booths, flashoff, etc. At one extreme are facilities with a coating line consisting of a primer application booth/flashoff/curing oven, with similar sets of equipment for a basecoat and top coat, all operating as a single coating application line. In such a case, the primer application equipment would be described on one "copy" of Form D1, the basecoat on another, etc., all with the same Coating Application ID (e.g., CA-001). If there is more than one coating line, each coating line will be given a distinct Coating Application ID (CA-001, CA-002, etc.). At the other extreme may be a "job shop" with many similar spray booths, any one of which may be used for any type of coating on an "as-needed" basis. In the case of "job-shop" type operations, each spray booth would be described on a single copy of Form D1, each with a distinct Coating Application ID (e.g., CA-001, CA-002, etc.).

Item-Specific Instructions

Coating Application ID: Identify each coating application unit and/or coating line using a separate copy of Form D1, and indicate the total number of Forms D1 being included in the response for this facility.

D1-1. **Description of Coating Application Unit:** Briefly describe each unique coating application unit at this facility.

D1-2. **Method of Application:** Check all coating application methods that apply to this specific coating application line.

D1-3. **Coating Application Unit Component Equipment:** For each area (coating area/booth, flash-off areas, etc.), provide all readily available details as described below. If emissions/limitations information is not available for each area, report Overall emissions and/or permit limitations in the last row.

> **Residence Time:** Indicate the amount of time the parts/products stay in that area prior to going to the next step in the coating line.
>
> **Temperature:** Indicate the temperature maintained in that area. If kept room temperature, enter "Ambient Indoor."
>
> **Enclosures:** Indicate if the area has an enclosure, hood or is open.
>
> **Vented to:** If enclosed or vented, to where is this air stream directed.
>
> **PM/Overspray Control:** Indicate what method is used to control particulate overspray.
>
> **Emissions:** Provide an estimate of the total HAP and total VOC emissions (estimated annual and any permit limitations) for each component type. If this level of detail is not possible, please estimate each for the entire application unit/coating system and report under "Overall."

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

FORM D1 - COATING APPLICATION EQUIPMENT

Revised: 10/19/98

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FORM D2 - COATING APPLICATION SYSTEMS

Revised: 10/19/98

The purpose of this form is to provide information regarding coating systems used with miscellaneous metal parts and products in your facility. Coating Systems refer to the combinations of products and coatings compatible with the product and with other coatings used on the product. This information should be provided independent of the information on Form D1.

Why is EPA looking for this information?

EPA will be analyzing responses to this survey to determine, among other things, the lowest emitting primers, base coats, top coats, etc. In this analysis, EPA wants to avoid choosing the low-emitting options in each class and have them not be compatible with one another, or to have a low-emitting set of options specified that is incompatible with a product.

Item-Specific Instructions

Coating System ID: Identify each coating system using a separate copy of Form D2, and indicate the number of coating systems used within this facility. More than one copy of each page of this two-page form may be required, depending on how many coatings and/or products are listed.

D2-1. **Regulatory Specifications:** Please check off all regulatory specifications to which the coating/part are subject. Acronyms are defined below.

DoD - Department of Defense
FHWA - Federal Highway Administration
FAA - Federal Aviation Administration
FDA - Food and Drug Administration
FCC - Federal Communications Commission
NTSB - National Traffic Safety Board
SDWA - Safe Drinking Water Act

D2-2. **Part(s)/Product(s) Coated:** List the names of the parts or products being coated on this coating application unit/system. Grouping of similar parts and products is encouraged.

Substrate Type: Check the substrate type, using one box to describe a single product type or group of products, all of the same substrate type. If the substrate is a combination of types, choose "Other" then specify what is being coated in the space provided.

Coating Requirements: Check all coating performance requirements that are important considerations for choosing the coatings for this part/product.

D2-3. **Coating Systems Applied in this Unit:** Coating Systems refer to coatings compatible with one another with the substrate being coated, and the specific characteristics required of the coating and/or product. It may be possible for one coating application unit (as defined on Form D1) to have multiple coating systems in use during the course of a year, or many units may be using the same coating system. The cross-referencing of coating lines with coating systems will be defined in Form D3.

Material(s) ID: Refer to the material number (e.g., MN-001) from Form B. List each component of a multi-component system within one block, including thinning solvents.

Annual Usage: Report the usage of each material for the reporting year (the year indicated on Form A). If multiple materials are listed, provide separate usage for each material and indicate measurement units (e.g., gallons).

FORM D2 - COATING APPLICATION SYSTEMS

Revised: 10/19/98

Coating Type: Indicate what type of coatings are being applied to the part(s) or product(s). Only coatings that are compatible with one another and are actually used with one another should be listed together as part of the same coating system.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

FORM D3 - COATING EQUIPMENT/COATING SYSTEM CROSS REFERENCE

The purpose of this form is to associate the coating application lines defined in Form D1 with the products being coated and the coatings being applied as defined on Form D2. The reason this approach was taken was to allow flexibility in your response, and to avoid unnecessary duplications in entering data.

Please list each coating application line once for each coating system used within that line. Provide approximate values indicating the percent of the Coating System used facility-wide that occurred in that Coating Equipment. If exact percentages are unknown, provide a "best-guess" estimate. For example, if three lines use coating system CS-001 on an equal basis and no other coating line at the facility uses that system, then each uses 33% of that coating system.

If all coating lines are using one coating system, indicate this on a single line (e.g., CA - "All coating lines;" CS-001; 50%). Conversely, if all coating systems are used on one coating line, this can also be indicated on a single line (e.g., CA-001; CS - "All coating systems;" 100%). Any reasonable permutation on this approach to filling out Form D3 will likely be acceptable. Please use a Comments Sheet to describe additional details, if necessary.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

FORM D3 - COATING EQUIPMENT/COATING SYSTEM CROSS REFERENCE

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FORM E - SURFACE PREPARATION

Revised: 10/19/98

This form is designed to collect information related to the preparation of the surface of a part or product prior to the application of a coating. Other types of cleaning activities (e.g., cleaning of the equipment used in surface coating operations) are not included. Surface preparation is defined as the removal of contaminants from the surface of a substrate, or the activation or reactivation of the surface in preparation for the application of a coating.

Surface Preparation Area ID: Identify each area performing surface preparation activities on parts/products to be coated using a unique number (e.g., SP-001)

Item-Specific Instructions

E-1. **Surface Preparation Area Name:** Provide the name(s) used to describe this surface preparation area within the plant and/or on air permits.

E-2. a) **Type of Operation:** Indicate each process used in surface preparation operations. If any process other than those listed is used in surface preparation, please describe this process in the space provided.

b) **Describe the Surface Preparation Operation:** Include any production, or cleaning techniques or materials that limit the type of surface coating technique or material that can be used. Indicate any increase or decrease in emissions that this causes.

E-3. **Equipment:** List all equipment used in the surface preparation process. An example has been provided.

E-4. **Materials Used:** Materials listed in this table should cross-reference to Form B. An example has been provided.

E-5. **Parts/Products being Prepared:** List each part or product that requires surface preparation and indicate the substrate composition (e.g.: aluminum, steel, copper, plastic, wood, wool, cotton, nylon, etc.)

E-6. **Estimated Emissions and Emission Limitations:** List total VOC and total HAPs emitted (tons per year to the nearest 0.1 ton) associated with surface preparation operations from this area. Also provide any permit limitations for this area.

E-7. **Emissions Capture and Control:** Please identify all enclosures used for capture of emissions associated with surface preparation operations. Provide the capture efficiency for the device(s), the Control Device ID(s) to which the air stream is sent (where applicable), and the Equipment ID(s) within the capture device (e.g., SE-001), as defined in Item E-3, above.

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.

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FORM E - SURFACE PREPARATION

Revised: 10/19/98

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FORM F - WASTE AND WASTEWATER

Revised: 10/19/98

The purpose of this form is to provide information regarding waste and wastewater generation, treatment and/or disposal for facilities with surface coating operations. Report information for coating operations and affiliated processes (surface preparation, mixing, etc) in the entire facility on this one form.

F-1. **Waste Generation**

a) **Waste Type:** Indicate each type of waste generated at this facility. If this facility generates a type of waste other than those listed, please provide a detailed description of that waste. The following definitions pertain to this section.

Sludge - the solids generated from any process (surface preparation, coating, mixing, etc.) that it is necessary to have disposed, either on-site or off-site.

Waste Coatings - coating materials from equipment cleaning, excess prepared coating materials, etc. that must be treated and/or disposed.

Waste Solvents - solvents that have been used in another process (surface preparation, etc.) that are collected for either recycling or disposal.

Wastewater - any process waters or cleaning waters should be considered wastewater at the point/time they leave the generating operation.

If your facility has a combined waste stream (e.g. waste coatings and waste solvents), please estimate the amount of each contributed to the waste stream and include in Item 1. b. Note these combined streams and any other pertinent details in a Comments Sheet for this form.

b) **Quantity Generated:** Give the amount of each type of waste generated in this facility in the appropriate units.

c) **Is this waste treated on-site?** Please indicate by checking yes or no.

d) **Are air emissions controlled?** Indicate if any method for controlling emissions of HAP or VOC to the air is used, including use of covers, add-on control devices, etc.

e) **Sources of Waste:** Identify the sources for each type of waste generated at this facility, using identifying numbers where possible (e.g., CA-001 for coating line No. 1).

f) **Total Estimated Annual HAP Emissions** (Tons/year), to the nearest 0.1 ton.

g) **Total Estimated Annual VOC Emissions** (Tons/year), to the nearest 0.1 ton.

F-2. **Mode of wastewater transport -** Indicate how wastewater is transported from the point of generation.

Open Trench - uncovered trench in which wastewater flows from point of generation to another point.

Open Pipe - covered trenches and pipes with openings to the open air at each end and/or through vents, manholes, etc.

Closed Pipe - completely closed piping with no opening to the atmosphere

Holding Tank - storage tank in close proximity to the point of generation which holds wastewater but does not reuse it in the process. Please indicate under termination point(s) how and where this wastewater is disposed (e.g., trucked off-site).

CBI Status: If you indicate that Confidential Business Information (CBI) is included on the form, please list the item numbers containing CBI. Please refer to your cover letter and survey package for guidelines regarding CBI, and note that if you do not indicate that CBI is on a form, EPA will assume that the form contains no CBI.