

$$\text{HAP}_{\text{used}} = \left[ \sum_{i=1}^m (\text{VOL}_{\text{ABA}, i}) (\text{D}_{\text{ABA}, i}) + \sum_{j=1}^n (\text{VOL}_{\text{clean}, j}) (\text{D}_{\text{clean}, j}) (\text{WT}_{\text{HAPclean}, j}) + \sum_{k=1}^o (\text{VOL}_{\text{adh}, k}) (\text{D}_{\text{adh}, k}) (\text{WT}_{\text{HAPadh}, k}) \right] \div 2000$$

(Equation 1)

Where,

$\text{HAP}_{\text{used}}$  = amount of HAP, excluding diisocyanate reactants, used at the plant site for slabstock foam production and foam fabrication, tons per year

$\text{VOL}_{\text{ABA}, i}$  = volume of HAP ABA  $i$  used at the facility, gallons per year

$\text{D}_{\text{ABA}, i}$  = density of HAP ABA  $i$ , pounds per gallon

$m$  = number of HAP ABAs used

$\text{VOL}_{\text{clean}, j}$  = volume of HAP used as an equipment cleaner, gallons per year

$\text{D}_{\text{clean}, j}$  = density of HAP equipment cleaner  $j$ , pounds per gallon

$\text{WT}_{\text{HAPclean}, k}$  = HAP content of equipment cleaner  $j$ , weight percent

$n$  = number of HAP equipment cleaners used

$\text{VOL}_{\text{adh}, k}$  = volume of adhesive  $k$ , gallons per year

$\text{D}_{\text{adh}, k}$  = density of adhesive  $k$ , pounds per gallon

$\text{WT}_{\text{HAPadh}, k}$  = HAP content of adhesive  $k$ , weight percent

$o$  = number of adhesives used

#### § 63.1291 Compliance schedule.

(a) Existing affected sources shall be in compliance with all provisions of this subpart no later than October 8, 2001.

(b) New or reconstructed affected sources shall be in compliance with all provisions of this subpart upon initial startup.

#### § 63.1292 Definitions.

All terms used in this subpart shall have the meaning given them in the Act, in subpart A of this part, and in this section. If a term is defined in subpart A and in this section, it shall have the meaning given in this section for purposes of this subpart.

*Auxiliary blowing agent, or ABA*, means a low-boiling point liquid added to assist foaming by generating gas beyond that resulting from the isocyanate-water reaction.

*Breakthrough* means that point in the adsorption step when the mass transfer zone (i.e., the section of the carbon bed

where the HAP is removed from the carrier gas stream) first reaches the carbon bed outlet as the mass transfer zone moves down the bed in the direction of flow. The breakthrough point is characterized by the beginning of a sharp increase in the outlet HAP or organic compound concentration.

*Calibrate* means to verify the accuracy of a measurement device against a known standard. For the purpose of this subpart, there are two levels of calibration. The initial calibration includes the verification of the accuracy of the device over the entire operating range of the device. Subsequent calibrations can be conducted for a point or several points in a limited range of operation that represents the most common operation of the device.

*Canned motor pump* means a pump with interconnected cavity housings, motor rotors, and pump casing. In a canned motor pump, the motor bearings run in the process liquid and all seals are eliminated.

*Carbon adsorption system* means a system consisting of a tank or container that contains a specific quantity of activated carbon. For the purposes of this subpart, a carbon adsorption system is used as a control device for storage vessels. Typically, the spent carbon bed does not undergo regeneration, but is replaced.

*Connector* means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered to be connectors for the purposes of this subpart.

*Cured foam* means flexible polyurethane foam with fully developed physical properties. A period of 12 to 24 hours from pour is typically required to completely cure foam, although mechanical or other devices are sometimes used to accelerate the curing process.

*Curing area* means the area in a slabstock foam production facility where foam buns are allowed to fully develop physical properties.

*Diaphragm pump* means a pump where the driving member is a flexible diaphragm made of metal, rubber, or plastic. In a diaphragm pump, there is no packing or seals that are exposed to the process liquid.

*Diisocyanate* means a compound containing two isocyanate groups per molecule. The most common diisocyanate compounds used in the flexible polyurethane foam industry are toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI).

*Flexible polyurethane foam* means a flexible cellular polymer containing urea and carbamate linkages in the chain backbone produced by reacting a diisocyanate, polyol, and water. Flexible polyurethane foams are open-celled, permit the passage of air through the foam, and possess the strength and flexibility to allow repeated distortion or compression under stress with essentially complete recovery upon removal of the stress.

*Flexible polyurethane foam process* means the equipment used to produce a flexible polyurethane foam product. For the purpose of this subpart, the flexible polyurethane foam process includes raw material storage; production equipment and associated piping, ductwork, etc.; and curing and storage areas.

*Foam fabrication process* means an operation for cutting or bonding flexible polyurethane foam pieces together or to other substrates.

*Grade of foam* means foam with a distinct combination of indentation force deflection (IFD) and density values.

*HAP ABA* means methylene chloride, or any other HAP compound used as an auxiliary blowing agent.

*HAP-based* means to contain 5 percent (by weight) or more of HAP. This applies to equipment cleaners (and mixhead flushes) and mold release agents. The concentration of HAP may be determined using EPA test method 18, material safety data sheets, or engineering calculations.

*High-pressure mixhead* means a mixhead where mixing is achieved by

impingement of the high pressure streams within the mixhead.

*Indentation Force Deflection (IFD)* means a measure of the load bearing capacity of flexible polyurethane foam. IFD is generally measured as the force (in pounds) required to compress a 50 square inch circular indenter foot into a four inch thick sample, typically 15 inches square or larger, to 25 percent of the sample's initial height.

*In diisocyanate service* means a piece of equipment that contains or contacts a diisocyanate.

*In HAP ABA service* means a piece of equipment that contains or contacts a HAP ABA.

*Initial startup* means the first time a new or reconstructed affected source begins production of flexible polyurethane foam.

*Isocyanate* means a reactive chemical grouping composed of a nitrogen atom bonded to a carbon atom bonded to an oxygen atom; or a chemical compound, usually organic, containing one or more isocyanate groups.

*Magnetic drive pump* means a pump where an externally-mounted magnet coupled to the pump motor drives the impeller in the pump casing. In a magnetic drive pump, no seals contact the process fluid.

*Metering pump* means a pump used to deliver reactants, ABA, or additives to the mixhead.

*Mixhead* means a device that mixes two or more component streams before dispensing foam producing mixture to the desired container.

*Molded flexible polyurethane foam* means a flexible polyurethane foam that is produced by shooting the foam mixture into a mold of the desired shape and size.

*Mold release agent* means any material which, when applied to the mold surface, serves to prevent sticking of the foam part to the mold.

*Plant site* means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or otherwise operated by the same entity, parent entity, subsidiary, or any combination thereof.

*Polyol*, for the purpose of this subpart, means a polyether or polyester polymer with more than one reactive hydroxyl group attached to the molecule.

*Rebond foam* means the foam resulting from a process of adhering small particles of foam (usually scrap or recycled foam) together to make a usable cushioning product. Various adhesives and bonding processes are used. A typical application for rebond foam is for carpet underlay.

*Rebond foam process* means the equipment used to produce a rebond foam product. For the purpose of this subpart, the rebond foam process includes raw material storage; production equipment and associated piping, ductwork, etc.; and curing and storage areas.

*Reconstructed source* means an affected source undergoing reconstruction, as defined in subpart A. For the purposes of this subpart, process modifications made to reduce HAP ABA emissions to meet the existing source requirements of this subpart shall not be counted in determining whether or not a change or replacement meets the definition of reconstruction.

*Recovery device* means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, carbon adsorbers, absorbers, and condensers.

*Research and development process* means a laboratory or pilot plant operation whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and which is not engaged in the manufacture of products for commercial sale except in a de minimis manner.

*Run of foam* means a continuous production of foam, which may consist of several grades of foam.

*Sealless pump* means a canned-motor pump, diaphragm pump, or magnetic drive pump, as defined in this section.

*Slabstock flexible polyurethane foam* means flexible polyurethane foam that is produced in large continuous buns that are then cut into the desired size and shape.

*Slabstock flexible polyurethane foam production line* includes all portions of the flexible polyurethane foam process from the mixhead to the point in the process where the foam is completely cured.

*Storage vessel* means a tank or other vessel that is used to store diisocyanate or HAP ABA for use in the production of flexible polyurethane foam. Storage vessels do not include vessels with capacities smaller than 38 cubic meters (or 10,000 gallons).

*Transfer pump* means all pumps used to transport diisocyanate or HAP ABA that are not metering pumps.

*Transfer vehicle* means a railcar, tank truck, or other vehicle used to transport HAP ABA to the flexible polyurethane foam facility.

#### § 63.1293 Standards for slabstock flexible polyurethane foam production.

Each owner or operator of a new or existing slabstock affected source shall comply with § 63.1294 and either paragraph (a) or (b) of this section:

(a) The emission point specific limitations in §§ 63.1295 through 63.1298; or

(b) For sources that use no more than one HAP as an ABA and an equipment cleaner, the source-wide emission limitation in § 63.1299.

#### § 63.1294 Standards for slabstock flexible polyurethane foam production—diisocyanate emissions.

Each new and existing slabstock affected source shall comply with the provisions of this section.

(a) *Diisocyanate storage vessels.* Diisocyanate storage vessels shall be equipped with either a system meeting the requirements in paragraph (a)(1) of this section, or a carbon adsorption system meeting the requirements of paragraph (a)(2) of this section.

(1) The storage vessel shall be equipped with a vapor return line from the storage vessel to the tank truck or rail car that is connected during unloading.

(i) During each unloading event, the vapor return line shall be inspected for leaks by visual, audible, or any other detection method.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but