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products. Benefits derived by banning this product would total approximately three-tenths of a cancer-case-avoided. Exposure to asbestos during the life cycle of this product is limited because the product is generally fabricated on site, used saturated with solution, and disposed of while wet. Asbestos is not prone to be released into the ambient air during stages after product fabrication. Further, insufficient information exists regarding the availability of substitute products for diaphragms in existing chlorine production plants to justify a ban. The cost of modifying existing plants to accept new membrane cell technology in response to a ban on asbestos use in this product may be very high. Based on available information, the total cost of banning this product is estimated to total more than \$2 billion. However, suitable substitutes now exist for asbestos diaphragms for use in more recently constructed chlorine product plants. Therefore, EPA specifically recommends that users of asbestos diaphragms use non-asbestos diaphragm cells in facilities that will accept them and in the design of new facilities.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) Insufficient information was available to determine whether suitable product substitutes will soon be available for use in existing chlorine production facilities; (2) the cost of banning this product category would be very high; (3) this product category accounts for only a minuscule portion of U.S. asbestos consumption (less than 1,000 tons in 1985); and (4) a ban on this product category would result in only minimal benefits because asbestos exposure is limited in most life cycle stages, relative to other products analyzed for this rule.

iv. *Battery separators.* These products are used to insulate or separate the polar terminals in batteries or fuel cells, primarily in highly-specialized military and aerospace applications. The benefits derived from a ban on this product would total only a small fraction of a cancer-case-avoided. Although EPA has no data on exposure to products in this category, exposures in stages of the product's life cycle beyond primary manufacture are likely to be limited, relative to other product categories, because asbestos is enclosed during use and disposal. In addition, because most uses are highly specialized and built to government specifications, it is doubtful that substitutes will be developed or costs of a prospective ban will decrease substantially in the near future.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) Insufficient information was available regarding product substitutes to determine the costs of banning this product, although available information indicates that the costs of a ban would be high; (2) this product category accounts for only a minuscule portion of U.S. asbestos consumption (approximately 1 ton in 1985); and (3) a ban on this product category would result in only minimal benefits because asbestos exposure is limited in most life cycle stages, relative to other products analyzed for this rule.

v. *High-grade electrical paper.* These products are used as electrical paper insulation, primarily for high-temperature, low-voltage applications such as motors, generators, transformers, and other heavy electrical apparatuses. The benefits derived from a ban on this product would total approximately 0.4 of a cancer-case-avoided. The cost of banning this product would be high because reasonably priced suitable substitutes do not exist for all applications and a number of existing substitutes are very expensive. The total cost of banning this product is estimated to total over \$51 million.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) This product category accounts for only a minuscule portion of U.S. asbestos consumption (approximately 744 tons in 1985); (2) the costs of banning this product would be very high, due to the absence of reasonably priced substitutes; and (3) a ban on this product category would result in minimal benefits.

vi. *Missile Liners.* These products are used to coat the interiors of rocket chambers, primarily in highly-specialized military and aerospace applications. Benefits derived by banning this product would total approximately four tenths of a cancer-case-avoided. EPA has no information indicating that suitable substitutes are available. The total cost of banning this product is estimated at almost \$2 billion. Because most uses are highly specialized military uses, it is doubtful that substitutes will be developed and be certified for these uses or that costs of a prospective ban will decrease substantially in the near future.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) This product category accounts for only a minuscule portion of U.S. asbestos consumption (approximately 700 tons in 1985); (2) the costs of banning this product would be

very high, because most uses are highly specialized military uses; and (3) a ban on this product category would result in minimal benefits.

vii. *Packings.* Packings are used to seal fluids in devices where motion is necessary. Benefits derived from banning this product category would total less than one tenth of a cancer-case-avoided. Exposures in the product life cycle stages beyond primary and secondary manufacture are likely to be limited, relative to other product categories, because asbestos in packings is generally saturated with lubricant during packing formation and with fluid during use and removal. In addition, there are many specialized uses of asbestos packings, including advanced technology and military applications. The cost of banning this product would be relatively high on a per unit basis because suitable substitutes do not exist and are unlikely to soon be developed for a significant number of packings applications and a number of existing substitutes are very expensive. The total cost of banning this product is estimated at \$0.55 million.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) this product category accounts for only a small portion of U.S. asbestos consumption (approximately 125 tons in 1985); (2) the costs per unit of banning this product would be relatively high for the amount of benefits derived, due to the absence of substitutes of similar cost or performance characteristics for a number of applications; and (3) a ban on this product category would result in minimal benefits because asbestos exposure is limited in most life cycle stages, relative to other products analyzed for this rule.

viii. *Reinforced plastic.* These products are used primarily for electromagnetic parts in the automotive and appliance industries and high-performance specialty plastics. Benefits derived by banning this product category would total approximately four tenths of a cancer-case-avoided. Exposures in product life cycle stages beyond primary manufacture are likely to be limited, relative to other product categories, because asbestos is encased in plastic in the end use products. In addition, the cost of banning this product would be high because suitable substitutes do not exist for a significant number of plastics applications and a number of existing substitutes are very expensive. The total cost of banning this product is estimated at almost \$35 million.

produced in the U.S. In addition, low-cost substitutes exist for products in the millboard and the specialty paper categories. Therefore, available evidence suggests that suitable substitutes should be available for most applications by the effective date of the Stage 3 ban. The total costs of the actions taken in this rule for these product categories are set forth in the following Table XXIV:

TABLE XXIV:—COST OF THE RULE FOR ASBESTOS PAPER PRODUCTS

Product	Total cost in \$ million, discounted at 3 percent)
Millboard	3.73
Specialty paper	0

The paper product categories were proposed for either a Stage 3 ban or a ban via the operation of a permit system. Many of these products are no longer used in the U.S. and suitable substitutes are rapidly being developed, although the development of reasonably-priced substitutes for some specialty uses might take a number of years. EPA is also concerned that consumers may be subject to uncontrolled exposures during installation, maintenance, repair, and removal of products such as millboard. In addition, many of these paper products are very similar in form and bans would be difficult to enforce were the products in this grouping banned at different times.

EPA has concluded that a Stage 3 ban is appropriate for these product categories for the following reasons: (1) Relatively high quantifiable exposure and individual risk levels exist for these products; (2) these products pose a high potential for ambient release during a number of life cycle stages; (3) consumers and workers are potentially subject to uncontrolled exposures, especially during installation, maintenance, repair, and removal of these products; (4) the cost of taking these actions is reasonable because several of these products are no longer produced or imported in the U.S. and because suitable substitutes are expected to exist for all of these products by the time of the ban; and (5) while the quantified benefits of banning these products are relatively small, compared to other product categories banned by this rule, these products are likely both to lead to a number of serious exposures that could not be readily quantified for this rule and to contribute significantly to environmental loading.

One asbestos paper product category, high-grade electrical paper, is not included within the rule's bans (see Unit V.F.1.v). This product is not included for a number of uses of the product, thereby making the cost of a ban very high relative to other products analyzed for this rule. In addition, high-grade electrical paper is reasonably discernable from other paper products.

k. *New commercial asbestos products.* This grouping covers all new asbestos-containing products whose commercial manufacture, importation, or processing commences after the effective date of this rule. All such new uses will be banned from manufacture, importation, processing, and distribution in commerce as of Stage 1, unless EPA grants an exemption application for the product or use. In view of the following factors, EPA finds that the use of asbestos in new products whose commercial manufacture, importation, or processing is initiated after the effective date of this rule's bans poses an unreasonable risk of injury to human health: (1) The development of substitute fibers, (2) the potential for high lifetime risks related to exposure to asbestos due to the manufacture, importation, processing, and use of new asbestos products, (3) the likely escalation of environmental loading of asbestos if the manufacture, importation, processing, or distribution in commerce of new asbestos products were allowed, (4) the speculative benefits of new uses of asbestos, and (5) the absence of cost related to modification of existing capital equipment. Therefore, EPA finds that the benefits of banning new commercial asbestos products outweighs the costs of such a ban. Should a new use of asbestos be developed which meets the criteria applied to exemptions for existing asbestos products, set out in Unit III.E of this preamble and § 763.173, an exemption should be applied for and may be granted.

1. *Categories and activities not subject to this rule's ban.* This grouping includes acetylene cylinders, arc chutes, asbestos diaphragms, battery separators, high-grade electrical paper, missile liners, packings, reinforced plastic, sealant tape, specialty industrial gaskets, and textiles. These products were generally proposed for a third stage ban or a ban via the operation of a permit system. These products are exempted from the final rule's bans because, based on currently-available information, EPA has not found that they pose an unreasonable risk of injury to human health under the criteria of TSCA section 6. EPA will reconsider its

decision whether to include these products within the ban if more information about them becomes available.

The following paragraphs discuss EPA's findings for the various products in this grouping.

i. *Acetylene cylinder filler.* These products are used as filler in steel cylinders used to store acetone in oxyacetylene torches. Benefits derived by banning this product would total less than one-tenth of a cancer-case-avoided. Exposures during primary manufacture are low due to the enclosed nature of the product's production process. Exposures in stages of the product's life cycle beyond primary manufacture are likely to be limited, relative to other product categories, because the product is enclosed and there is little exposure during product repair or disposal compared to other products analyzed for this rule.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) Current substitutes are more expensive than asbestos products and little information is available on the relative performance characteristics of substitutes; therefore, reasonable cost, suitable substitutes may not be available for all applications of these products; (2) this product category accounts for only a minuscule portion of U.S. asbestos consumption (approximately 584 tons in 1985); and (3) a ban on this product category would result in only minimal benefits because asbestos exposure is limited in most life cycles stages, relative to other products analyzed for this rule.

ii. *Arc chutes.* These products are used to guide electric arcs in products including motor starter units in electric generating plants. The benefits derived from a ban on this product would total only a small fraction of a cancer-case-avoided. Although EPA has no data on exposure for products in this category, exposures in product life cycle stages beyond primary manufacture are likely to be limited, relative to other product categories, because the asbestos is bound in ceramic in the end use product.

EPA does not believe that a ban is appropriate for this product category for the following reasons: (1) Insufficient information was available regarding exposure to determine the benefits of banning this product; (2) this product category accounts for only a minuscule portion of U.S. asbestos consumption (approximately 13.5 tons in 1985).

iii. *Asbestos diaphragms.* These products are used primarily in the chlor-alkali industry in the production of chlorine, caustic soda, and other

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