

age. [230, Ref. 6] A hazard factor was derived from the number of serious exposures for a substance, normalized to the overall rate of major effects and deaths.

Hazard factors for many of these products, including acid and alkali drain cleaners, alkali oven cleaners, and ethylene-glycol-based products, were found to be significantly higher than the hazard factor for all other reported cases, despite the fact that CRP is already required for these substances. Thus, children are exposed to these toxic household chemicals.

It is expected that CRP capable of passing the senior adult test will be easier for adults to use correctly, and the availability of such packaging will encourage adults to purchase the products in CRP and properly use the packaging. It seems particularly important to make such a requirement for these household products, because data submitted by one commenter showed low senior-adult test scores for household chemical products. Senior test data submitted by this commenter for 12 different packages showed that 10 packages had senior effectiveness below 90%. Two packages had senior-effectiveness below 50%. [210, Ref. 15] Since many of the household chemical products are quite toxic, it is reasonable to require that such products be in CRP that adults are capable of opening and resealing properly.

The majority of packaging for household chemicals (approximately 65%) uses the same CRP types used for pharmaceutical products. [233] For these products, it is just as feasible to provide improved CRP for household products as it is for pharmaceutical products. For the remaining household products, primarily products in metal cans or aerosol dispensers, there are no test data demonstrating that currently commercially available packages are senior-friendly.

Senior-friendly packaging may be developed for metal cans, especially if the cap is designed for the use of a tool to aid in opening. A tool is especially useful for this application since the caps for products in metal cans often are applied initially with a high torque to prevent leakage during shipment. After the initial opening, the option for a tool is available if needed. The Commission is aware of one promising prototype of a cap for metal cans that has senior-friendliness as a design goal. [213, 245, 251] Any applications that use both a metal can and a metal closure would probably take the longest to develop and implement senior-friendly packaging. [232, 240]

As to aerosols, various types of senior-friendly overcaps show promise. [232, 240] In addition, designs that use a tool to remove an overcap may be developed. [170, 183, 232 Ref. 15, 240 Ref. 11, 248] There is an existing design that places the aerosol actuating button in a narrow recess that is deep enough that the button can be reached by an adult's finger, but not by a child's. [240 Ref. 12, 261] Another design uses an annular ring that is mounted around the aerosol can so that it can rotate but is not removable. [256] The overcap screws into the upper portion of the rotatable ring. If one holds the body of the can and tries to unscrew the overcap, the ring rotates and the overcap will not unscrew. To remove the overcap, the ring must be held so it does not rotate while the cap is being unscrewed. Although both of these designs are promising, the Commission does not know whether they have been subjected to either the child or senior-adult tests.

The Commission concludes that there are currently a substantial number of ingestions by children of household chemicals and that a significant portion of seniors cannot open and reseal existing packages. Thus, improving the packages will reduce the likelihood that the CR package will be defeated or not resealed. Therefore, the Commission decided to include household chemicals as a group in the requirement for senior-friendly packaging.

Nevertheless, as noted above, aerosols and metal packages with metal closures are likely to take the longest time to implement senior-friendly packaging, and to present the most difficulties. Excluding these two types of packaging from the revised requirements at this time will also reduce the potential competition for the services of testing organizations during the 30-month period before compliance with the revised adult test will be required for other products.

The Commission's technical staff believes that senior-friendly packaging for all products, including those in metal containers and in aerosols, can be produced eventually. Nevertheless, excluding products that require metal or aerosol containers from the revised requirements will enable the Commission to monitor the further development and testing of these limited types of packaging before making any subsequent decision about whether or not to require such packages to be senior-friendly.

Accordingly, the Commission concludes that products that must be packaged in metal packages with metal closures, or in aerosols, will not be

subject to the senior-adult test that is issued below. However, the Commission will monitor the development of senior-friendly versions of these types of packages and revisit this issue at a later time. These metal and aerosol containers will be subject to the revised child test and will remain subject to the current younger-adult test. All other products presently subject to special packaging requirements under the PPPA will be subject to the revised child and senior-adult requirements.

A product will be deemed to require metal containers or aerosol form if:

1. No other packaging type would comply with other state or Federal regulations,
2. No other packaging can reasonably be used for the product's intended application,
3. No other packaging or closure material would be compatible with the substance,
4. No other suitable packaging type would provide adequate shelf-life for the product's intended use, or
5. Any other reason clearly demonstrates that such packaging is required.

In the absence of convincing evidence to the contrary, a product shall be presumed not to require a metal container if the product, or another product of identical composition, has previously been marketed in packaging using either a nonmetal package or a nonmetal closure. If requested by the Commission's staff, the manufacturer or packager of a product packaged in a non-senior-friendly metal or aerosol container will provide a justification of why, under the criteria specified above, the product requires such packaging.

H. Comments on Statutory Findings

Many commenters claimed that the Commission did not have sufficient information to make the statutory findings that technically feasible, practicable, and appropriate senior-friendly CRP is available for all substances regulated under the PPPA.

Some commenters seem to believe that in order for a package to be technically feasible, practicable, and appropriate, it must be commercially available. This is not the case. These findings mean that senior-friendly CR packages can be made and mass produced that are compatible with the substances to be packaged. The CPSC presented data in the March 1994 **Federal Register** notice on many different packages that are commercially available and have passed the senior-friendly protocol. In addition, closure manufacturers have indicated that other types of senior-friendly packaging can