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This Week's Feature

PACKAGING OF HAZARDOUS SUBSTANCES FOR TRANSPORTATION – MAKING SENSE OF THE MAZE By Michael Palermo, Jr.

Attorneys representing chemical manufacturers will at some point encounter federal regulations for packaging hazardous substances for transportation in commerce. By following a few simple rules, the maze of regulations enacted by the Department of Transportation (DOT) can be easily understood.

The transportation of hazardous substances is governed by the Hazardous Materials Transportation Authorization Act of 1994. 49 U.S.C. §5101 *et seq.* The purpose of the Act is to minimize risks of the transportation of such materials through regulation of labeling, packaging, and shipping.

The packaging regulations at 49 C.F.R. subtitle B are complex and technical. Products regulated include liquid chemicals, hazardous solids, and dangerous gasses. Despite the apparent complexity of the regulations, determining the appropriate regulations can be summarized in three simple steps: (1) identify the product; (2) determine the label and packaging classification; and (3) apply the appropriate regulations.

For step one, identify the product, there is a chart at 49 C.F.R. 172.101 which contains hundreds of substances by name or type. Locate the product on the chart, which then gives the hazard class, label codes, special provisions, packaging requirements, shipping quantity limitations, and other requirements. You may need to rely on a toxicologist's opinion to determine the exact product identity.

For example, your client's product may be

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quaternary ammonium compounds which are not specifically listed in the table. However, they are known to be corrosive and fall under the generic classification "disinfectants, liquid, corrosive, n.o.s."

For step two, the chart gives various classifications for determining labeling and packaging. In our example, "disinfectants (liquid, corrosive, n.o.s.)" are listed under three entries depending on the corrosivity. Relevant classifications include: symbols - G; PG (packaging group) - I, II, or III; and Label Codes - 8.

For step three, determine the packaging requirements, the descriptions and definitions for each classification are found in 49 C.F.R. §172.101, which refers to the more specific regulations governing that particular classification.

So symbol classification "G" refers to 49 C.F.R. §172.203(k), which requires that where an ingredient is not otherwise specified ("n.o.s.") in the table, the shipping container must bear the classification followed by the technical ingredient name of the two most prevalent components contributing to the hazard rating. For our example, "disinfectants, liquid, corrosive, n.o.s. (quaternary ammonium compounds)."

Packaging group determines what kind of container the product may be shipped in. Packaging groups I, II, and III refer to the danger level of the product: great, medium or minor, respectively. "Disinfectants, liquid, corrosive (n.o.s.)" may be shipped under Group I, II or III. Next, go to 49.C.F.R. §173.201, 202, and 203, which give the approved containers for each packaging group. If we were to choose plastic as our shipping medium, we would find that for all three packaging groups pertaining to disinfectant liquid materials - I, II, and III - plastic drums meeting standard 1H2 are allowed.

The next part of step three is to determine the particular specifications for your chosen package. For each type of packaging, the DOT has enacted technical regulations for testing to ensure that the package will not fail in transport. Specific testing requirements for our sample container are in 49 C.F.R. part 178, subpart M. Sections 178.600 through 608 contain drop tests, leak tests, hydrostatic pressure test, stacking tests, etc., which

determine the durability of the container. Often these tests are performed and the results certified by the container manufacturer.

Finally, label code "8" is again defined as "corrosive" according to the table at §172.101(g). This requires the word "corrosive" to appear on the label. In addition, 49 C.F.R. §172.442 requires the corrosive symbol to appear on the label (a picture of a hand with liquid being dripped on it from a test tube and the word "corrosive").

This is just an example of how to simplify the process of negotiating DOT regulations on packaging of hazardous materials for shipping. Although the regulations are much more precise than presented here, following this three step process will narrow the search for the relevant regulations.

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