

Code of Operating Practice: Reconditioning and Remanufacturing Plastic Drums

As a member of the Reusable Industrial Packaging Association (RIPA), this company is committed to support the continuing effort to improve the packaging reconditioning industry's responsible performance of its role in waste source reduction, recycling, and responsible packaging management. We pledge to manage our business according to the following guiding principles. We:

- Adhere to RIPA's Code of Operating Practice for plastic drums.
- Recognize and respond to community concerns about packaging disposal and the operations of packaging reconditioning facilities.
 - Produce packagings that are effective in safely containing all appropriate materials in transportation and storage.
 - Make health, safety and environmental considerations a priority in our planning for all existing and new processes.
 - Counsel packaging users on the safe use, transportation, emptying, reuse, and recycling of packagings.
 - Operate our plants in a manner that protects the environment and the health and safety of our employees and the public.
 - Work with others to resolve problems created by past packaging disposal practices.
 - Participate with government and others in creating responsible laws, regulations, and standards to safeguard the community, workplace, and environment.
 - Promote the principles and practices of Responsible Packaging Management by sharing our experiences and offering assistance to others who produce, use, transport, or dispose of packagings.
 - Foster the integrity and reputation of the industry by refraining from publishing knowingly false, misleading, or commercially disparaging statements or advertisements about our products and services, or the products and services of competitors.

1.0 Basic recommendation.

Plastic drums used for the transportation of hazardous materials that are remarked, mechanically altered, or that must be mechanically processed in any way to be able to meet the design-type tests, may not be reused without first being reconditioned. Performance of any step of the reconditioning process should be accompanied by performance of all reconditioning steps. That is, if any element of reconditioning is done (e.g., cleaning, changing non-integral gaskets) then the entire reconditioning process should be completed in accordance with this Code, including cleaning to original materials of construction, replacement of gaskets, inspection for quality and testing for leaks. This is to assure that any reference to reconditioning provides the filler of a drum with total packaging integrity.

2.0 Reconditioning firm.

2.1 A business that properly reconditions plastic drums for use in transporting hazardous materials is one that possesses the necessary equipment and processes drums in accordance with all of the provisions described of this Code of Operating Practice. Where required, a plastic drum reconditioning firm shall be registered or licensed by appropriate government authorities and shall mark reconditioned packagings with the firm's identification as its certification of regulatory compliance.

2.2 The reconditioning firm must maintain a documented quality control program.

2.3 The reconditioning firm shall encourage plant reviews during normal operating hours by any emptier or customer.

2.4 In addition to meeting the details of this Code of Operating Practice, the reconditioning firm should be in compliance with all applicable government regulations pertaining to safety and health, and environmental protection.

3.0 Incoming empty drum requirements.

3.1 *Transportation of plastic drums containing residues.* Drums that have been used for the transportation of hazardous materials that have not been cleaned and purged of all hazards must be transported with all closures in place, with all original hazard markings and labels legible.

3.2 *Acceptance of plastic drums containing residues; "empty" plastic drums.* No drums may be accepted that are not empty, unless the reconditioning firm holds permits issued by appropriate environmental authorities to receive and process hazardous wastes. "Empty" means that the drum complies with the California "drip dry" or federal empty EPA Container standard. The federal standard states that drums must be as empty as possible using practices commonly employed to remove materials from drums, including pouring, pumping and aspiration. In addition, no more than 2.5 cm (1 inch) of residual material may remain in the bottom of the drum. If more material may be poured out of the drum, then it is not empty. If everything is poured out, but more than 2.5 centimeters (1 inch) remain on the bottom, the drum is not empty. If the residual material is listed by EPA in 40 CFR 261.33(e) as a "P-listed" acute hazardous waste, the drum is not deemed empty unless it has been triple-rinsed using an effective solvent, or has been cleaned by a method shown to achieve equivalent removal. Plastic drums permanently marked "poison" may only be offered for additional use in transporting hazardous wastes or toxic materials in Hazard Class 6.1..

3.3 *Empty plastic drum certification.* Every person providing drums containing any residues to a reconditioning firm, regardless of prior contents, shall sign an "Empty Drum Certification" on each occasion that drums are offered, verifying that the drums are empty in accordance with the explanation of that term in 3.2, above.

3.4 *Rejection of plastic drums that are not empty.* Drums containing residues of prior contents, that are to be loaded on the reconditioning firm's trucks by the reconditioning firm's employees, may be rejected if they appear to be unduly heavy because of the

unintended retention of product. Drums brought to the reconditioning firm's plant, or loaded on the reconditioning firm's vehicle by the emptier's employees, may be rejected at the reconditioning firm, if, upon internal inspection, they are found to be not empty. Rejected drums shall be returned to the emptier as product and the emptier shall be advised of the reason for the rejection.

3.5 Inspection of incoming plastic drums. The reconditioning firm must inspect each drum when it is unloaded from transportation equipment. All drums must be inspected to make certain they are empty, to determine the original specification of the drum, and to determine whether the drum is damaged or unreconditionable and therefore must be prepared for scrap in accordance with 7.0 below.

4.0 Closed head drum processing.

4.1 All prior contents must be removed. Minimal absorption in the drum of prior contents is acceptable if such residue does not affect the structural integrity of the drum, or cause unsafe incompatibility problems with future contents.

4.2. The exterior of the drum must be cleaned to the original materials of construction, removing labels, adhesives and coatings. Surface treatments may be utilized to improve external appearance.

4.3 After cleaning, an internal and external inspection of the drum must be conducted. If any of the prior contents remain, except as noted in 4.1, the drum must be rejected or subjected to further processing. The drum must be inspected for flange damage, permanent discoloration, excessive odors, stress cracking, and surface damage that reduces the structural integrity of the drum. Drums that show evidence of these problems should be rejected.

4.4 The thoroughly cleaned drum must be mechanically leakproofness tested by either a “wet” or “dry” method. The “wet” method requires complete immersion in water and

application of an internal air pressure of at least 20 kPa (3 psi) for Packing Group II or III materials, or 30 kPa (4 psi) for Packing Group I materials for at least 5 seconds. The “dry” method requires the application of the same levels of air pressure or vacuum for at least 5 seconds by a device which accurately measures pressure retention or vacuum decay. DOT- approved alternative tests of similar sensitivity may be used. Drums found to be leaking must be rejected.

4.5 All closures must be removed, cleaned, and replaced if necessary, or reinserted with suitable new gaskets. Closures and flanges must show no damaged threads and must ensure a leakproof seal.

4.6 The completed drum must be marked with the reconditioning firm's identification number or registered symbol, the last two digits of the year of testing, the symbol of the nation in which the reconditioning was performed, the letter "R", and the letter "L" for drums that have been successfully leakproofness tested. The reconditioning firm's identity marking constitutes a certification that the drum meets all applicable regulations and this *Code of Operating Practice*.

5.0 Open head plastic drum processing.

5.1 Open head drums and covers, and closed head drums from which the top heads have been removed, must be cleaned thoroughly. All prior contents must be removed. Minimal absorption in the drum of prior contents is acceptable if such residue does not affect the structural integrity of the drum, or cause unsafe incompatibility problems with future contents.

5.2 The exterior of the drum must be cleaned to the original materials of construction, removing labels, adhesives and coatings. Surface treatments may be utilized to improve external appearance.

5.3 After cleaning, an internal and external inspection of the drum and drum cover must be conducted. If any of the prior contents remain, except as noted in 5.1, the drum must be rejected or subjected to further processing. The drum and cover must be inspected for flange damage, permanent discoloration, excessive odors, stress cracking, and surface damage that reduces the structural integrity of the drum. Drums and covers that show evidence of these problems must be rejected. Drums that show evidence of significant shrinkage must be restored to their original shape and contour, or rejected.

5.4 When required by applicable regulations, each open head drum, except its removable head, must be leak tested by either a “wet” or “dry” leakproofness test. Drums must receive an internal test of at least 20 kPa (3 psi) for Packing Group II and III materials, or 30 kPa (4 psi) for Packing Group I materials for at least 5 seconds. DOT-approved alternate tests of similar sensitivity may be used. Drums found to be leaking must be rejected or repaired.

5.5 All closures must be removed, cleaned, and replaced if necessary, or reinserted with suitable new gaskets. Closures and flanges must show no damaged threads and must ensure a leakproof seal.

5.6 The closing rings must be reformed and, if necessary, cleaned, painted or replaced.

5.7 The completed drum must be marked with the reconditioning firm's identification number or registered symbol, the last two digits of the year of testing, the nation in which the reconditioning was performed, the letter "R" and the letter "L" for drums that have been successfully leakproofness tested. The reconditioning firm's identity marking constitutes a certification that the drum meets all applicable regulations and this *Code of Operating Practice*.

6.0 Converted and remanufactured plastic drums.

Drums converted from one UN type to another UN type (e.g., 1H1 to 1H2); or which undergo the replacement of integral structural components are remanufactured drums. All requirements applicable to the manufacturer of new drums of that specification apply to these drums.

7.0 Drum rejection

7.1 *Rejected plastic drums.* Drums that have been rejected during the inspection processes and cannot be repaired for hazardous materials service are to be cleaned and directed to nonhazardous material service or prepared for scrap. When preparing drums for scrap, the drum interior and exterior must be cleaned using an effective cleaning agent, thereby removing all foreign matter, prior residues, labels and decorative coatings, and the drum then must be mechanically cut, shredded or granulated.

7.2 *Granulation of plastic drums.* Drums that are granulated may need to be separated according to manufacturer and color, with consideration given to prior contents. Material that is contaminated (e.g., paint, odor) should be packaged separately. Material intended for recycling should be handled in accordance with a written quality assurance program. Each batch should be verified to ensure it has the proper melt-flow rate, density, and other factors necessary for the intended purpose. Material that fails any test should be rejected.

7.3 *Disposal of off-specification material.* Material which cannot be sold to an end user for any reason should be disposed of in compliance with all applicable federal, State and local laws and regulations.

8.0 Environmental and employee protection.

8.1 *Storage of plastic drums containing residues.* Unreconditioned drums must be stored with all closures in place, and must be inspected periodically to assure no residual contents are leaking. All drums that are obviously unfit for reconditioning should be

rejected immediately and should be prepared for scrap in accordance with the preceding paragraphs.

8.2 *Accumulated residues from plastic drums.* All wastes generated in the reconditioning process must be managed in full compliance with applicable regulations governing such wastes.

8.3 *Wastewater and air emissions.* Discharges of wastewater from the reconditioning plant to the environment or to the sewer system, and emissions to the atmosphere, must meet applicable water and air pollution regulations for that geographical area. Offensive emissions (odors) must be minimized whether subject to government controls or not.

8.4 *Employee protection.* Exposure of employees to any chemicals in the workplace, including the contents of incoming drums, must be reduced to the extent practicable. At a minimum, this necessitates the reconditioning firm providing and requiring the use of effective personal protective equipment. The firm must have in place a program of Hazard Communication for employees, including federally mandated access to Material Safety Data Sheets (MSDS's).

8.5 *Training.* Employees must be trained in the proper performance of their jobs, including awareness of the hazards of the process chemicals to which they are exposed and of the importance of compliance with this Code and all government regulations.

8.6 *Company vehicles and drivers.* The reconditioning firm shall employ drivers to operate company vehicles in compliance with standards of the Federal Motor Carrier Safety Administration (or other national, regulatory body). The firm shall adhere to rules on the qualification of drivers, including provisions relating to alcohol or other substance testing. Company vehicles shall be maintained in safe operating condition.

8.7 *Fire Safety.* All practical precautions against fires must be implemented, including having adequate fire extinguishing capability, contingency planning, effective

coordination with local emergency response authorities, and good housekeeping to minimize opportunities for ignition and to facilitate employee evacuation in emergencies.

9.0 Public statements and advertising

9.1 Each RIPA member shall foster the integrity and reputation of the packaging industry generally and the RIPA membership specifically by refraining from publishing knowingly false, misleading or commercially disparaging statements or advertisements.

9.2 Member's public statements and advertisements shall not knowingly misrepresent fact or law, or create a negative impression or expectation about competitive products and services unless such statement or advertisement is based upon facts which are amenable to independent measurement and verification.