

Code of Operating Practice: Reconditioning and Remanufacturing Steel Drums for Use in Transporting Hazardous Materials

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 steel 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.

Packaging that is reformed, de-dented, remarked, repainted, or 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 steel drums 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 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 **Steel Drum Reconditioning.**

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

3.2 ***Acceptance of drums containing residues; "empty" 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 must be as empty as possible using practices commonly employed to remove materials from drums, including pouring, pumping, and aspirating. 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.

California reconditioners may not accept drums that do not comply with the state empty packaging rule 22 CCR 66261.7.

3.3 ***Empty 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 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 drums.* The reconditioning firm must inspect each raw 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 3.9, below.

3.6 Closed head drum processing.

3.6.1 All former contents and any corrosion must be removed. The interior must be treated for corrosion resistance. Controls must be established to prevent condensation.

3.6.2 An internal visual inspection must be performed. If any of the prior contents remain after performance of the reconditioning process, or if rust is evident, the drum must be rejected or be subjected to further processing.

3.6.3 Chimes must be mechanically straightened to reform and reseal them. Drums must be de-dented using internal pressure sufficient to restore original shape and contour.

3.6.4 The drum exterior must be chemically cleaned, mechanically brushed, or abrasive blasted to remove labels, coatings, and corrosion. The exterior surface shall be properly prepared for painting.

3.6.5 The thoroughly cleaned drum must be leak tested by complete immersion in water and application of an internal air pressure of at least 20 kPa (3 psi) for Packing Group II and III drums and 30 kPa (4 psi) for Packing Group I drums, for at least 5 seconds, or by using DOT-approved alternative test methods of equal sensitivity. Drums found to be leaking must be rejected or repaired by welding or brazing.

3.6.6 Before painting, drums must be inspected for deterioration and drums having visible pitting, significant reduction in parent metal thickness from rust, corrosion, or other material defects, or which have not been returned to original shape and contour, must be rejected.

3.6.7 All closures must be removed, cleaned, and reinserted with suitable new gaskets. Bungs and flanges must show no damaged threads and must ensure a leakproof seal.

3.6.8 The drum must be painted with a new exterior coating to provide a protective and decorative finish.

3.6.9 The completed drum must be marked with the reconditioning firm's name and addressor registered symbol (e.g., identification number), and the year of testing. Drums marked in accordance with the US standards must include the nation in which the reconditioning was performed, the letter "R", and the letter "L" for drums that have been successfully leakproofness tested. If the original manufacturer's durable full UN marking has been removed in the reconditioning process, it must be replaced by the reconditioner before the drum may be used again to transport hazardous materials. The reconditioner's replacement mark may show a performance level below that originally marked by the drum manufacturer, but in no case may a reconditioner mark a higher performance level than was embossed on the bottom of the drum as part of its original "birth certificate". The reconditioning firm's identity and "R" marking is a certification that the drum meets all applicable regulations and this Code of Operating Practice.

3.7 Open head drum processing.

3.7.1 Open head drums and closed head drums from which the top heads have been removed, must be cleaned thoroughly. All former contents and corrosion must be removed. If the top head is removed by cutting or unrolling, the side wall must be curled or beaded to accept an open head cover.

3.7.2 When thermal processing is utilized, drums with covers removed must be conveyed through a drum reclamation furnace which subjects both the interior and the exterior of the drum to temperatures sufficient to prepare the drum for abrasive cleaning. The charred material and former linings and coating, as well as rust, must be removed through abrasive blasting on the interior and exterior, reducing the drum to bare metal.

3.7.3 The contour of the drum must be mechanically restored. Chimes must be mechanically straightened to reform and reseal them. Drums must be expanded or re-rolled to restore original shape and contour.

3.7.4 When required by applicable regulations each open head drum, except its removable head and adjacent bead area, must be leak tested by complete immersion in water and application of an internal air pressure of at least 20 kPa (3 psi) for Packing Group II and III drums and 30 kPa (4 psi) for Packing Group I drums, for at least 5 seconds, or by using DOT approved alternative test methods of equal sensitivity. Drums found to be leaking must be rejected or repaired by welding or brazing.

3.7.5 Drums must be inspected for deterioration and those having visible pitting, significant reduction in parent metal thickness from rust or corrosion, other material defects, or which have not been returned to original shape and contour, must be rejected.

3.7.6. All closures must be removed, cleaned, and reinserted with suitable new gaskets. Bungs and flanges must show no damaged threads and must ensure a leakproof seal.

3.7.7 The closing rings must be reformed and cleaned, or replaced.

3.7.8 The drum must be painted with a new exterior coating to provide a protective and decorative finish. The interior coating or treatment, if required, must be applied and cured in accordance with the coating manufacturer's specifications.

3.7.9 The completed drum must be marked on the top or side with the "First Line" UN mark, the reconditioning firm's name and address or registered symbol (identification number), the year of testing, a reference to the nation in which the reconditioning was performed, the letter "R" , and the letter "L" for drums that have been successfully leakproofness tested. If the original manufacturer's durable full UN marking has been removed in the reconditioning process, it must be replaced by the reconditioner before the drum may be used again to transport hazardous materials. The reconditioner's replacement mark may show a performance level below that originally marked by the drum manufacturer, but in no case may a reconditioner mark a higher performance level than was embossed on the bottom of the drum as part of its original "birth certificate". The reconditioning firm's identity marking constitutes a certification that the drum meets all applicable regulations and this *Code of Operating Practice*.

3.8 ***Remanufactured drums.*** Drums converted from DOT specification drums into UN drums, from one UN type to another type, or which have had integral structural components replaced, are remanufactured drums. All requirements applicable to the manufacture of new drums apply to these drums.

3.9 ***Rejected 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, or must be thermally neutralized in a drum reclamation furnace, thereby removing all foreign matter, prior residues, labels and decorative coatings, and the drum then must be mechanically or hydraulically crushed or shredded.

4.0 Environmental and employee protection.

4.1 *Storage of 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. Destructive corrosion of drum inventory from atmospheric and ground moisture must be avoided.

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

4.3 *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 must be minimized whether subject to government controls or not.

4.4 *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.

4.5 *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.

4.6 *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 on the qualification of drivers, including provisions relating to

alcohol or other substance abuse. Company vehicles shall be maintained in safe operating condition.

4.7 *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.

5.0 Public statements and advertising

5.1 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.

5.2 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.

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.

Code of Operating Practice Reprocessing Intermediate Bulk Containers (IBCs)

As a member of the Reusable Industrial Packaging Association (RIPA), this company is committed to support the continuing effort to improve the industrial packaging 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 intermediate bulk containers.
- Recognize and respond to community concerns about industrial packaging disposal and the operations of industrial packaging reprocessing facilities.
- Produce industrial 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 manufacture, use, transportation, emptying, reuse, and recycling of industrial 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 industrial 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 industrial 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.**

Intermediate Bulk Containers 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 remanufactured, repaired, or routinely maintained (per 49 CFR 180.350-352). Performance of any step of these processes should be accompanied by performance of all associated steps. For example, if any element of repair is done (e.g., replacement of the rigid inner receptacle of a composite IBC), then the entire repair process should be completed in accordance with this Code. This is to assure that any reference to remanufacturing, repair, or routine maintenance provides the filler of an IBC with total packaging integrity.

2.0 **IBC Reprocessing Firm.**

2.1 *General.* A business that properly reprocesses IBCs for use in transporting hazardous materials is one that possesses the necessary equipment and reprocesses IBCs in accordance with all of the provisions described of this Code of Operating Practice.

Where required, an IBC reprocessing firm shall be registered or licensed by appropriate government authorities and shall mark reprocessed IBCs with the firm's identification as its certification of regulatory compliance.

2.2 *Quality control.* The reprocessing firm must maintain a documented quality control program.

2.3 *Open Door policy.* The reprocessing firm shall encourage plant reviews during normal operating hours by any emptier or customer.

2.4 **Compliance.** In addition to meeting the details of this Code of Operating Practice, the reprocessing firm should be in compliance with all federal, national, provincial and local government regulations pertaining to safety and health, and environmental protection.

3.0 **Incoming Empty IBC Requirements.**

3.1 **Transportation of Intermediate Bulk Containers containing residues.** IBCs that have been used for the transportation of hazardous materials that have not been cleaned and purged of any potential hazard must be transported with all closures, and service and structural equipment in place, with all original hazard markings and labels legible.

3.2 **Acceptance of Intermediate Bulk Containers containing residues; "empty" IBCs.** No IBC that previously contained hazardous material may be accepted that is not empty, unless the reprocessing firm holds permits issued by appropriate environmental authorities to receive and process hazardous wastes. "Empty" means that the IBC complies with the California "drip dry" or U.S. EPA empty container standard. The U.S. standard states that IBCs must be as empty as possible using practices commonly employed to remove materials from IBCs, including pouring, pumping and aspiration. In addition, no more than 1-inch or 0.3 percent by weight of the total capacity of the IBC may remain in the bottom of the IBC. If more residual hazardous material than this remains in the IBC, the IBC 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 IBC 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. Rigid plastic and composite IBCs that previously contained "poison" may only be offered for additional use in transporting toxic materials in Class 6.1, or hazardous wastes.

3.3 **Empty Intermediate Bulk Container certification.** Every person providing IBCs containing any residues to a reprocessing firm, regardless of prior contents, shall sign an "Empty IBC Certification" on each occasion that IBCs are offered, verifying that the IBCs are empty in accordance with the explanation of that term in 3.2, above. A

reprocessor operating an exclusively non-hazardous empty packaging management program should fully document such programs.

3.4 *Rejection of Intermediate Bulk Containers that are not empty.* IBCs containing residues of prior contents, that are to be loaded on the reprocessing firm's trucks by that firm's employees, may be rejected if they appear to contain excessive amounts of retained product. IBCs brought to the reprocessing firm's plant, or loaded on the reprocessing firm's vehicle by the emptier's employees, may be rejected at the reprocessing firm, if, upon internal inspection, they are found to be not empty. Rejected IBCs 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 Intermediate Bulk Containers.* The reprocessing firm must inspect each IBC when it is unloaded from the transport vehicle. All IBCs must be inspected to make certain they are empty, to determine the original specification of the IBC, and to determine whether the IBC is damaged or not able to be reprocessed and therefore, must be prepared for scrap in accordance with 9.0 below.

4.0 IBC Reprocessing – General Requirements.

4.1 *General requirements.* All prior contents must be removed. Minimal absorption in a rigid plastic or the bottle of a composite IBC of prior contents is acceptable if such residue does not affect the structural integrity of the IBC, or cause unsafe incompatibility problems with future contents.

4.2. *Exterior cleaning.* The exterior of the IBC, including pallets and cages, must be cleaned of all residues and contamination. Unless required for reuse programs, labels must be removed along with adhesives and coatings. Surface treatments may be applied to improve external appearance.

4.3 *Inspection.* After cleaning, an internal and external inspection of the IBC must be conducted. If any of the prior contents remain, except as noted in 4.1, the IBC must be

rejected, repaired or subjected to further processing. The exterior of the IBC and its associated components must be inspected for damage that would significantly weaken the IBC such as, stress cracking and surface damage that reduces the structural integrity of the unit. Units also should be inspected for permanent discoloration and excessive odors.

4.4 *Equipment.* All service and structural equipment must be cleaned and reinstalled, or replaced, if necessary. Filling, discharge, pressure relief and venting devices must show no damage and must ensure a leaktight seal.

4.5 *Marking.* Reprocessed IBCs must be marked with the symbol of the country in which the reprocessing was carried out, the reprocessor's identification number or registered symbol and, if "repaired" (as described in 6.0 below), the last two digits of the year of testing. The reprocessing firm's identity marking constitutes a certification that the IBC meets all applicable regulations and this Code of Operating Practice.

5.0 IBC Remanufacturing.

5.1 *Definition.* IBCs that are produced as a UN type from a non-UN type, or that are converted from one UN design type to another UN design type, are remanufactured IBCs. All remanufactured IBCs are subject to the same regulatory requirements, including markings, as newly manufactured IBCs

5.2 *Testing remanufactured IBCs.* All applicable design type tests (i.e., bottom lift, stacking, leakproofness, hydraulic pressure and drop) shall be performed successfully on each new IBC design type.

5.3 *Test reports.* A test report must be prepared for each design type tested and certified as hazardous materials. The test report must be signed and retained by the tester, and a copy of the signed report shall be maintained at each facility at which the IBC design type is remanufactured for a period of not less than 2.5 years.

5.4 ***Periodic retests.*** A manufacturer or remanufacturer of an IBC must retest and re-certify each active design type at least once every 12 months.

6.0 **IBC “Repair”.**

6.1 ***“Repair” of IBCs.*** Metal, rigid plastic and composite IBCs that have been damaged by impact or otherwise show evidence of reduced strength (e.g., corroded metal, embrittled plastic), may be repaired for reuse. IBCs so repaired must conform to the original design type and be able to withstand the design type tests. The bodies of rigid plastic IBCs, and the inner receptacle of composite IBCs, may not be repaired.

6.2 ***Replacement of inner receptacles.*** The term “repair” includes the replacement of the rigid inner receptacle of a composite IBC with another receptacle that conforms to the original manufacturer’s specification. Replacement receptacles (“bottles”) must be (as of 2011) of the same type and from the same manufacturer as the receptacle. Replacement bottles from other than the “original equipment manufacturer” (OEM) trigger requirements for ***IBC remanufacturing*** (e.g. full design type testing and certification).

6.3 ***Leakproofness testing of repaired IBCs.*** After repair, all IBCs intended to contain liquids or solids for filling and discharge under pressure, shall be leakproofness tested in accordance with 49 CFR 178.813 under a new inner receptacle inner receptacles that have been leakproofness tested by the seller, need not be re-tested by the reprocessors.

6.4 ***Marking repaired IBCs.*** The person who tests and inspects an IBC that has been repaired shall durably mark the IBC to show the country in which the tests and inspections were carried out, the name or the registered symbol of the company responsible for the repair, and the month and year of the leakproofness tests and inspections.

6.5 **Recordkeeping for repair activity.** A test report shall be created for all IBCs that have been successfully repaired and leakproofness tested. The IBC owner shall retain the test report until the date of the next repair, or 2.5 years, whichever comes first.

“Routine Maintenance” of IBCs.

7.1 **General.** Routine maintenance of IBCs includes cleaning, removal and reinstallation or replacement of body closures (including gaskets), or of service equipment (e.g., filling and discharge valves, pressure relief devices). Routine maintenance also includes restoration of structural equipment (e.g., fasteners, stabilizers) that does not directly perform a containment or discharge pressure retention function. For example, IBC legs and lifting attachments may be straightened.

7.2 **Leaktightness verified.** The leaktightness of a routinely maintained IBC must be verified if body closures or service equipment have been removed or replaced. Checking for “leak tightness” can be done visually and need not require internal pressurization.

7.3 **Marking routinely maintained IBCs.** The person performing routine maintenance on IBCs shall durably mark the IBC near the manufacturer’s design type mark to show the country in which the maintenance activity took place, and the name or the authorized symbol of the person performing such maintenance.

Periodic Inspections

8.1 **General.** A leakproofness test must be performed every 2.5 years on all IBCs intended to contain liquids or solids loaded or discharged under pressure, starting from the date of manufacture or the most recent repair. In addition, an external inspection of the IBC must be performed to ensure the IBC is properly marked, service and structural equipment is sound and functioning, and the IBC is generally safe for use in the storage and transportation of hazardous materials. Missing or damaged marks must be restored.

IBCs must be inspected internally every 5 years for any defects which could render the unit unsafe in transportation. Metal IBCs must be checked to ensure that the unit continues to meet minimum wall thickness.

8.2 *Periodic inspection marking requirements.* Following a periodic inspection and retest, the person performing the inspection and retest must ensure that all required marks are on the IBC, and shall include in the full durable UN mark the date (month and year) of the inspection and retest.

8.3 *Recordkeeping.* A record of inspections, including tester's name, location, design type and results, must be kept for at least 2.5 years or until periodic inspection and retest is performed again.

9.0 IBC Rejection.

9.1 *Rejected Intermediate Bulk Containers.*

IBCs that have been rejected during the inspection process and cannot be repaired for hazardous materials service are to be cleaned and directed to non-hazardous material service or prepared for scrap. When preparing IBCs for scrap, the interior and exterior must be cleaned using an effective cleaning agent, thereby removing all foreign matter, prior residues, labels and decorative coatings, and the IBC then must be mechanically prepared for scrap.

9.2 *Granulation of plastic IBCs or the plastic inner receptacles of composite IBCs.*

IBCs that are granulated may need to be separated according to manufacturer and color, with consideration given to prior contents. Granulated material that is tainted (e.g., with 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.

9.3 ***Disposal of off-specification material.*** Granulated 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.

10.0 **Environmental and Employee Protection**

10.1 ***Storage of IBCs containing residues.*** Unreprocessed IBCs must be stored with all closures in place, and must be inspected periodically to assure no residual contents are leaking. All IBCs that are obviously unfit for reprocessing should be rejected immediately and should be prepared for scrap in accordance with the preceding paragraphs.

10.2 ***Accumulated residues from IBCs.*** All wastes generated in the reprocessing process must be managed in full compliance with applicable regulations governing such wastes.

10.3 ***Wastewater and air emissions.*** Discharges of wastewater from the reprocessing 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 odors must be minimized whether subject to government controls or not.

10.4 ***Employee protection.*** Exposure of employees to any chemicals in the workplace, including the contents of incoming IBCs, must be reduced to the extent practicable. At a minimum, this necessitates the reprocessing 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).

10.5 **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.

10.6 **Company vehicles and drivers.** The reprocessing firm shall employ drivers to operate company vehicles in compliance with standards of the U.S. Federal Motor Carrier Safety Administration. 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.

10.7 **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.

11.0 Public Statements and Advertising

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

11.2 **Public statements and advertising.** Members' 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 amendable to independent measurement and verification.

Code of Operating Practice: Reprocessing and Reconditioning of Fiber Drums

As a member of the Reusable Industrial Packaging Association (RIPA), this company is committed to 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 Fiber 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.**

Packaging that is 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. This is to assure that any reference to reconditioning provides the user of a drum with total packaging integrity.

2.0 **Reconditioning firm.**

2.1 A business that properly reconditions fiber drums is one that possesses the necessary equipment and processes drums in accordance with all of the provisions described in this *Code of Operating Practice*. Where required, a 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 Preparation and Acceptance of Emptied Drums

3.1 *Transportation of drums containing residues.* Drums that have been used for the transportation of hazardous materials that have not been completely 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 drums containing residues; "empty" 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 must be as empty as possible using practices commonly employed to remove materials from drums, including pouring, pumping, and aspirating. 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.

California reconditioners may not accept drums that do not comply with the state empty packaging rule 22 CCR 66261.7.

3.3 *Empty drum certification.* Every person providing to a reconditioning firm drums containing any residues, 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 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 drums. The reconditioning firm must inspect each “raw” 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, incineration or recycling

4.0 Fiber Drum Reconditioning

- Inspect incoming drums, their covers, gaskets (if present), and rings.
- Pull any bags or liners that may be present.
- Clean the interior and removable parts: may include washing, wiping, blowing with pressurized air, etc.
- De-identify the drum as to its previous lading. Labels may be painted over or spray painted to de-identify. For labels that are removed, caution is to be taken in avoiding removal of fiber plies.
- Re-assemble the drum and removable parts.
- Inspect the assembled and closed drum.
- If intended for hazmat service, apply durable UN mark.

4.1 Completed drums intended for hazmats must be marked with the reconditioning firm's identification number or registered symbol, and the year of testing. Drums marked in accordance with the US standards must include the nation in which the reconditioning was performed, the letter "R", and the letter "L" for drums that have been successfully leakproofness tested. If the original manufacturer's durable full UN marking has been removed in the reconditioning process, it must be replaced by the reconditioner before the drum may be used again to transport hazardous materials. The reconditioner's replacement mark may show a performance level below that originally marked by the drum manufacturer, but in no case may a reconditioner mark a higher performance level unless "remanufactured" as in 4.x below. The reconditioning firm's identity and "R" marking is a certification that the drum meets all applicable regulations and this Code of Operating Practice.

4.2 ***Remanufactured drums.*** Drums converted from DOT specification drums into UN drums, from one UN type to another type, or which have had integral structural components replaced, are remanufactured drums. All requirements applicable to the manufacturer of new drums apply to these drums, including full design type testing.

4.3 ***Rejected 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 or incineration. When preparing drums for scrap or incineration, the drum interior and exterior must be cleaned, removing all foreign matter, prior residues, labels and closures, and then disposed of properly.

5.0 Environmental and employee protection.

5.1 ***Storage of 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. Damage of drum inventory from atmospheric and ground moisture must be avoided.

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

5.3 *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 must be minimized whether subject to government controls or not.

5.4 *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 where necessary 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 (MSDSs)* in the event an employee is stricken by exposure to a chemical or other material.

5.5 *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.

5.6 *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 applicable, national regulatory body). The firm shall adhere to rules on the qualification of drivers, including provisions relating to alcohol or other substance abuse. Company vehicles shall be maintained in safe operating condition.

5.7 ***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.

6.0 **Public statements and advertising**

6.1 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.

6.2 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.