



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety Administration

East Building, PHH – 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

APPROVAL CA2011030038

(THIRD REVISION)

ISSUED BY THE COMPETENT AUTHORITY OF THE UNITED STATES

EXPIRATION DATE: August 31, 2025

1. **APPROVAL HOLDER:** Greif Packaging LLC
Delaware, OH
United States
2. **REGULATORY AUTHORITY:** 49 CFR § 178.601(h) - Approval of equivalent packaging.
3. **SYNOPSIS:** Greif, Inc. is authorized to use recycled plastic materials in the manufacture of UN1H1 and UN1H2 plastic drums at the Packing Group II and III performance levels. The most recent revision supersedes all previous revisions.
4. **BASIS:** This Approval is issued in response to Greif Packaging LLC's renewal application dated September 22, 2020.
5. **PERIOD OF VALIDITY AND CONDITIONS OF APPROVAL:** This Approval does not provide relief from any requirement of the Hazardous Materials Regulations except as stated herein. This Approval is valid until the posted expiration date or unless suspended or terminated by the Associate Administrator for Hazardous Materials Safety.
 - a. **Applicability:** This Approval applies to the manufacture in the U.S. of UN1H1 and UN1H2 plastic drums at the Packing Group II and III performance levels.

- b. Approved Materials: All materials authorized to be transported in UN1H1 and UN1H2 plastic drums at the Packing Group II and III performance levels may be transported in packagings authorized under the terms of this Approval.
- c. Packaging: Packagings must be UN1H1 and UN1H2 plastic drums as described in the initial Approval application dated January 10, 1997 submitted by the Plastic Drum Institute of the Society of Plastics Industry, Inc. and any additional information submitted therewith. The minimum thickness of a plastic drum must be in accordance with 49 CFR 173.28(b)(4).
- d. Quality Assurance Program: Greif Packaging LLC shall employ a quality assurance program for evaluating and controlling recycled plastic material used in the manufacture of plastic drums to ensure the following:
 - (1) Sorting and cleaning used plastic material and identification of resins: Only resins which have been prepared and evaluated under Greif Packaging LLC's quality assurance program and determined to be suitable for use may be used in drum manufacture. All recycled material selected for use must be cleaned in a manner that removes residue from the prior lading.
 - (2) Batching: For purposes of this Approval, a batch of resin from recycled material is not more than 250,000 pounds of resin that has been sorted and selected as detailed in Greif Packaging LLC's quality assurance program and is identified with regard to—
 - (i) Source of the recycled material (e.g., drums, intermediate bulk containers, etc.) and description of the sorting process;
 - (ii) Previous lading of recycled containers, including identification of hazardous materials, if applicable;
 - (iii) Results of the resin specifications set forth in paragraph 5.d.(4) below.

(3) Rejection of unsuitable material. Greif Packaging LLC may not use a resin from recycled material which –

- (i) Is made from containers which previously contained a Division 6.1 material;
- (ii) Does not conform to the resin specifications set forth in paragraph 5.d.(4) below; and
- (iii) Is otherwise determined to be unsuitable under Greif Packaging LLC's quality assurance program.

(4) Resin Specifications:

- (i) Greif Packaging LLC shall verify that each batch of recycled plastics material has the proper melt flow rate, and density, consistent with that of the design type manufactured from such recycled material. This evaluation shall be conducted in accordance with the following standards:
 - (A) Melt Flow Rate - ASTM D-1238, Standard Test Method for Flow Rate of Thermoplastics by Extrusion Plastometer.
 - (B) Density - ASTM D-1505, Standard Test Method for Density of Plastics by Density-Gradient Technique; or ASTM D 792, Standard Test Method for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- (ii) Each batch of resin must demonstrate –
 - (A) A melt index (HMLI), when tested in accordance with ASTM D-1238 at 21.6 kg and 190°C, that does not exceed the ranges specified below:
 - ◆ Recycled resin with an HLMI range of < 4 must be within ± 1.5 grams per 10 minutes;

- ◆ Recycled resin with an HLMI range of $\geq 4 < 8$ must be within ± 2 grams per 10 minutes; or
- ◆ Recycled resin with an HLMI range of $> 8 \leq 12$ must be within ± 2.5 grams per 10 minutes.

(B) A density, when tested in accordance with either ASTM D-1505 or D-792, within the range of 0.960 ± 0.02 g/cc.

(5) Manufacture of drums using recycled material

- (i) Performance Testing. Performance testing must be conducted as required by Part 178, Subpart M at the appropriate Packing Group performance level. Periodic retesting must occur at least every 12 months.
- (ii) Marking. In addition to the marking requirements of 49 CFR 178.503, each drum shall be marked in a permanent manner (e.g., embossed) in a lettering size conforming to 49 CFR 178.3(a) with the following:
 - (A) The statement "Not for food or drink," unless otherwise authorized by a federal governmental agency; and
 - (B) The letters "REC" which indicates the drum is manufactured from recycled material.

e. Documentation and Record Retention: In addition to the record retention requirements of 49 CFR 178.601(1), Greif Packaging LLC shall maintain for as long as a drum is produced and for two years thereafter, and make available upon request by DOT representatives at the manufacturing facility, the following information:

- (1) A copy of Greif Packaging LLC's quality assurance program.
- (2) For each resin used in the manufacture of a drum:

- (i) The source of the recycled material (e.g., drums, intermediate bulk containers, etc.) and description of the sorting process;
- (ii) Previous lading of recycled containers, including identification of hazardous materials, if applicable;
- (iii) Results of the resin specifications set forth in paragraph 5.d.(4) above.

6. **MODES OF TRANSPORTATION AUTHORIZED:** As authorized by the Hazardous Materials Regulations for the hazardous materials to be transported.

7. **SPECIAL PROVISIONS:**

- a. A current copy of this Approval must be maintained and made available for examination at each location where packagings authorized under this approval are manufactured, marked, or tested.
- b. A current copy of this Approval must be maintained and made available for examination at each location where materials are packaged and offered for transportation under its authority.
- c. Any person who offers for transportation or transports hazardous materials in the above-described packagings may do so under the authority of this Approval if all requirements and conditions of this Approval are met.
- d. Any person who receives a package covered by this Approval may reoffer it for transportation provided no modification or change is made to the packaging and it is reoffered for transportation in conformance with this Approval.
- e. This Approval in no way affects the need to obtain any required authorizations from other agencies of the United States Government or from the competent authorities of countries of origin, transit and destination.
- f. The approval holder must maintain a record that contains a listing of the number of packagings

manufactured, marked, and sold under the terms of the approval. This record must be made available upon request to a DOT representative or an enforcement official.

- g. Notwithstanding the provisions of this Approval, a UN marking placed on a packaging constitutes the Approval holder's certification that the packaging is capable of meeting all of the applicable UN performance testing requirements of 49 CFR Part 178, Subpart M.
- h. Shipments or operations conducted under this Approval are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR 171.15 - Immediate notice of certain hazardous materials incidents, and 49 CFR 171.16 - Detailed hazardous materials incident reports. In addition, the holder of this Approval must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment, or operation conducted under the terms of this Approval.

8. **GENERAL PROVISIONS:**

- a. Failure by any person to comply with the terms and conditions of this Approval and the Hazardous Materials Regulations, 49 CFR Parts 171-180, may result in the modification, suspension or termination of that person's authority to use this Approval. Failure to comply may also subject that person to penalties prescribed by 49 U.S.C. §§ 5123 and 5124. This Approval may be modified, suspended or terminated in its entirety if that action is justified in light of changes in circumstances or additional information not available when this Approval was issued. Unless immediate modification, suspension or termination is necessary to avoid a risk of significant harm to persons or property, before action is taken, that person will be notified and provided with an opportunity to show why the proposed action should not be taken.
- b. Each "Hazmat employee," as defined in § 171.8, who performs a function subject to this Approval must be provided training on the requirements and conditions

of this Approval in addition to the training required by §§ 172.700 through 172.704.

- c. Any person operating under the terms of this Approval must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.

Issued in Washington, D.C.

Dated: September 23, 2020

A handwritten signature in blue ink, appearing to read "Ryan J. Vieg".

for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous
Materials Safety, Pipeline and Hazardous Materials Safety
Administration, Department of Transportation, Washington, D.C.
20590. Attention: PHH-30.