1. **GRANTEE:** (See individual authorization letter)

2. **PURPOSE AND LIMITATION:**

   a. This special permit authorizes the transportation in commerce of certain Division 4.1 and 4.2 hazardous materials in alternative packagings and alternative segregation by cargo vessel. This special permit provides no relief from the Hazardous Materials Regulations (HMR), the International Civil Aviation Organization’s Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) or the International Maritime Dangerous Goods (IMDG) Code other than as specifically stated herein. The most recent revision supersedes all previous revisions.

   b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.

   c. This special permit serves as an “exemption” as defined in 1;3.1.1 of the ICAO TI and Section 7.9.1 of the IMDG Code (see IMO MSC/Circ. 1075-Granting Exemptions from the Provisions of the IMDG Code), and as a “Competent Authority Approval” as defined under 49 CFR § 107.1.

3. **REGULATORY SYSTEM AFFECTED:** 49 CFR Parts 106, 107 and 171-180, the ICAO TI, and the IMDG Code.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.212, 173.213, 173.240 and 173.241; Packing Instructions 449 and 470 of the ICAO TI; and Packing Instructions P002 and P410 of the IMDG Code in that alternative packagings are not authorized, except as specified herein; and § 176.83 and 7.2.3.2.2 of the IMDG Code in that the “away from” segregation requirements are waived.

5. BASIS: This special permit is based on the application of Entegris, Inc. dated July 11, 2017 submitted in accordance with § 107.109 and additional information dated December 19, 2018.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

<table>
<thead>
<tr>
<th>Hazardous Materials Description</th>
<th>Hazard Class/Division</th>
<th>Identification Number</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese resinate</td>
<td>4.1</td>
<td>UN1330</td>
<td>III</td>
</tr>
<tr>
<td>Self-heating solid, inorganic, n.o.s.</td>
<td>4.2</td>
<td>UN3190</td>
<td>II</td>
</tr>
</tbody>
</table>

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed is gas purification equipment packaged inside a non-DOT specification wooden crate. The gas purification equipment must meet the following requirements:

   (1) The gas purification equipment consists of a sturdy cabinet with associated instruments and controls; metal receptacles are contained within the cabinet.

   (2) The authorized hazardous materials must be contained in the metal receptacles, interconnected by stainless steel process piping and manifolds, secured by a series of molecular sieves and fitted with isolation valves. The hazardous materials must be protected by a blanket of nitrogen at a pressure of 5 psig or less.
(3) The receptacles must be securely mounted metal receptacles in conformance with the Entegris, Inc. drawing submitted with the application on file with the Office of Hazardous Materials Safety Approvals and Permits Division.

(4) The gas purification equipment must be placed in a non-DOT specification wooden crate prior to being offered for transportation. The non-DOT specification wooden crate must be constructed in conformance with ASTM D6251 and GSA Federal Specification PPP-B-601. The wood used in the construction of the crate must be in conformance with ASTM D6199 and GSA Commercial Item Description A-A-55057.

b. OPERATIONAL CONTROLS:

(1) The gas purification equipment authorized under this permit must contain only one of the authorized hazardous materials when being offered for transportation.

(2) All components must be installed and protected by the gas purification equipment’s metal cabinet to prevent damage or release of the hazardous materials during normal transportation.

(3) All valves must be securely closed during transportation with individual isolation valves.

(4) The maximum net quantity of hazardous materials contained in any individual gas purification equipment (i.e., in any package) must not exceed the package limit authorized for cargo aircraft only as indicated in Column (9B) of the Hazardous Materials Table (49 CFR 172.101) and Column 13 of the ICAO TI Dangerous Goods List entries for the hazardous material listed in paragraph 6 above.

(5) The quantity restriction listed in paragraph 7.b.(4) applies to all modes approved under this special permit.
(6) When transported by vessel, authorized packages containing equipment classified in Division 4.1 are not required to be segregated “away from” authorized packages containing the gas purification equipment classified in Division 4.2.

8. **SPECIAL PROVISIONS:**

   a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

   b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit, the HMR, the ICAO TI and the IMDG Code.

   c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

   d. For purposes of transportation by cargo aircraft and cargo vessel, this special permit constitutes an exemption to the ICAO TI in accordance with 1;1.1.3. and as an exemption to the IMDG Code in accordance with Part 7, Chapter 7.9, Section 7.9.1.

   e. This special permit 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 the States of origin, transit, over flight, and destination of the consignment, as well as the State of the air operator.

9. **MODES OF TRANSPORTATION AUTHORIZED:** Motor vehicle, rail freight, cargo vessel and cargo-only aircraft.

10. **MODAL REQUIREMENTS:** A current copy of this special permit must be carried aboard each cargo vessel, aircraft, or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.
11. **COMPLIANCE:** Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. **REPORTING REQUIREMENTS:** Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for
Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

[Signature]

for William Schoonover
Associate Administrator for Hazardous Materials Safety


Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: BeMOORE/SG