This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-32235.

CLASSIFICATION

Heater modules are of the following styles:

- Style A - Three sub-units plus a Boil-In-Bag (BIB) module
- Style B - Four sub-units

REQUIREMENTS

1. Heater module

   The Type II heater module shall consist of a heater module box containing three or four heating trays, activation fluid units, heaters, polymeric food trays or Institutional Size Pouches (ISP) and the activation mechanisms/pull tabs. Sub-assemblies are allowed. When applicable, there shall also be a Boil-In-Bag (BIB) module. The components and sub-units shall be assembled and the activation mechanisms/pull tabs shall be connected to the three or four activation fluid units and to the three or four heaters. The sub-units and the BIB module (when applicable) shall be placed into the heater module box.
A. Heater.

The heater shall be constructed of materials that, when activated by a fluid, shall initiate and propagate an exothermic reaction suitable for use with food. This reaction shall generate adequate heat to heat the food to a safe food serving temperature. No toxic gas, liquid or solid by-products are desirable. If toxic by-products are produced, they shall be of the least severity and smallest amount possible while allowing for adequate heating and ensuring operator and consumer safety. When low hydrogen generating heater is used, it shall generate less than 30 liters of hydrogen in 60 minutes. The heater material shall be evenly distributed and completely sealed within the scrim matrix of the heater to minimize the release of materials, and facilitate direct in-place activation of the heater materials. The heating rate shall be optimized to minimize the time required to heat the food, yet not cause excessive foaming or uncontrolled release of reaction by-products. The heater and barrier material shall not melt, deform or degrade during heating.

The heater is activated by the addition of a fluid that shall fully activate the heater material. The non-woven porous polymeric scrim shall be sealed and sized to accommodate proper fit and function of the heater module. Each heater (heater elements in a matrix) shall be correctly and legibly labeled in accordance with MIL-DTL-32235.

The heater shall be placed in the bottom of the heating tray, covered and hermetically sealed in place with a layer of barrier material to the bottom of the tray with a peelable seal. The barrier material shall be scored (laser or mechanical) and shall be attached to a pull strip to enable activation.

B. Activation fluid unit.

The unit consisting of the pouch containing the activation fluid shall be made of material equivalent to Class 1 of MIL-PRF-131. Alternate activation fluid pouch materials and designs shall be permitted with approval from Natick Soldier Research, Development and Engineering Center. The pouch shall be manufactured in accordance with the dimensions and design shown in Figure 1. Tolerances for the pouch dimensions shall be ± 1/8 inches. Sufficient length for the center strip and careful assembly is critical to ensuring that the pouch is not inadvertently torn open during assembly and subsequent transport and storage. The solid lines shown at 1 inch off center at the base of the strip are cut lines. The 1 inch center strip section of the pouch shall be constructed with additional material for reinforcement. The center section of the pouch shall be scored (laser or mechanical) to provide easy tear properties without degrading the strength and barrier properties of the pouch. The pouch shall be filled with 1.5 percent saline (water and sodium chloride) solution, or as specified by the heater manufacturer with approval from Natick Soldier Research, Development and Engineering Center. The volume of fluid in the pouch, when combined with the heater, shall be adequate to initiate and propagate the exothermic reaction. Each activation fluid unit shall be correctly and legibly labeled in accordance with MIL-DTL-32235.
C. Heating tray.

The heating tray shall be molded from 0.090 inch high density polyethylene. Injection molded and thermoformed designs have performed adequately; other acceptable processes and materials are allowed. The heating tray shall consist of two compartments. The smaller compartment serves as a retaining reservoir for the activation fluid unit and includes two buttons to which the two short tabs of the activation fluid unit pouch are secured.

A fold-over flap shall be included on the heating tray to retain and protect the activation fluid unit. A slot shall be cut into the cover to allow the center strip of the activation fluid unit pouch to slide through, which later is attached to an activation mechanism/pull tab.
The larger compartment shall be configured to hold the heater, one polymeric food tray or ISP, and accommodate the activation fluid. The compartment shall be configured with a raised and rounded edge that supports the polymeric food tray securely above the heater.

Dimensions of the heating tray shall be as specified in Figure 2. The tolerance for the angle measurements shall be ± 1 degree. The tolerance for the linear measurements shall be ± 1/8 inch.

D. Pull tabs.

The pull tabs shall be constructed of a blend of low to medium density polyethylene or equivalent material and shall provide high strength characteristics under a wide range of environmental conditions. The material shall withstand temperatures ranging from -20°F to 160°F without fracture or failure. Dimensions of the pull tabs shall be as specified in Figures 3 or 4.
The pull tabs shall be configured with loading stations to support the three or four tray two-step activation method intended for the heater module. Each station shall be configured to retain the assembled activator strip and withstand a minimum pull force of 75 pounds. For a tab configured like the R16-4WCSCRGERD tab (Figure 3), the center strip of the activation fluid unit shall be inserted through the back opening of the tooth and each of the two holes on the extending end of the activator tab are pressed onto this tooth until the edge of the strip is secured under both retaining teeth. For a tab configured like the RND-PT tab (Figure 4), the end of the center strip of the activating fluid unit shall be folded between the retaining holes and the tab inserted through the retaining station(s). The second pull tab shall be assembled to the heater pull strips in a similar configuration.

Upon completion of the heater module, the three or four center strips of the activation fluid units securely connect to a pull tab, and the three or four pull strips of the packaged heater securely connect to another pull tab. At the time of use, the operator of the heater module pulls the pull tabs to expose the heaters and to tear the activation fluid unit pouches which open and release the saline solution and activate the heaters.

FIGURE 3. Pull tab, Rear loading design
FIGURE 4. Pull tab, Center loading design

E. Assembly of heater module.

The components or sub-units shall be assembled. The Type II heater module shall consist of a box containing three sub-units and a BIB module or four sub-units, with activation mechanisms/pull tabs. The sub-unit shall consist of the heating tray with sealed-in heater, the activation fluid unit and the polymeric food tray or (ISP). Sub-assemblies of components may be used. The three or four sub-units shall be stacked and one activation mechanism/pull tab shall be connected to the three or four activation fluid unit center strips and the other activation mechanism/pull tab shall be connected to the three or four heater pull strips. The sub-units and the BIB module (when applicable) shall be placed into the heater module box. The entrée polymeric food tray shall be on the bottom and the dessert polymeric food tray shall be on the top. When there is a BIB module, it shall be placed on top of the three sub-units.

Corrugated fiberboard pads or cushioning shall be packed as necessary to fill excess headspace. The heater module box shall be closed and instruction sheets applied. Design and dimensions of the heater module box shall be as specified in Figure 5. Each heater module shall be correctly and legibly labeled in accordance with MIL-DTL-32235.
MIL-DTL-32235/2

EXAMINATION AND TESTS:

A. Type II heater module examination. In addition to the heater module examination specified in MIL-DTL-32235, the finished product shall be examined for conformance to the requirements specified in this specification sheet. The Type II heater module shall be examined for the defects listed in Table I.
TABLE I. Type II heater module defects

<table>
<thead>
<tr>
<th>Category</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Heater module not type or not style specified.</td>
</tr>
<tr>
<td>102</td>
<td>Heater does not contain materials that will initiate and propagate an</td>
</tr>
<tr>
<td></td>
<td>exothermic reaction.</td>
</tr>
<tr>
<td>103</td>
<td>Heater causes excessive foaming or uncontrolled release of reaction</td>
</tr>
<tr>
<td></td>
<td>by-products.</td>
</tr>
<tr>
<td>104</td>
<td>Heater not hermetically sealed in tray with barrier material.</td>
</tr>
<tr>
<td>105</td>
<td>Center strip of activation fluid units not reinforced.</td>
</tr>
<tr>
<td>106</td>
<td>Score lines on activation fluid units missing or damaged.</td>
</tr>
<tr>
<td>201</td>
<td>Score line on heater barrier material not provided.</td>
</tr>
<tr>
<td>202</td>
<td>Heater barrier material not connected to pull strip.</td>
</tr>
<tr>
<td>203</td>
<td>Heater pull strip not attached to activation mechanism/pull tab.</td>
</tr>
<tr>
<td>107</td>
<td>Activation mechanism/pull tab missing or damaged.</td>
</tr>
<tr>
<td>204</td>
<td>Activation fluid unit pull strip not attached to activation mechanism/pull tab.</td>
</tr>
<tr>
<td>205</td>
<td>Activation mechanism/pull tab not assembled properly.</td>
</tr>
<tr>
<td>108</td>
<td>Fold-over flap on heating tray to retain the activation fluid unit</td>
</tr>
<tr>
<td></td>
<td>missing or damaged.</td>
</tr>
<tr>
<td>109</td>
<td>Heating tray design or dimensions not correct.</td>
</tr>
<tr>
<td>206</td>
<td>Polymeric trays or ISPs or BIB, if applicable, of food not placed in</td>
</tr>
<tr>
<td></td>
<td>module in correct order.</td>
</tr>
<tr>
<td>110</td>
<td>Excess headspace in module allowing movement of components.</td>
</tr>
</tbody>
</table>
207  Low hydrogen generating heater generates more than 30 liters in 60 minutes.

1/ Heater material construction shall be verified by Certificate of Conformance (CoC).
2/ Material in accordance with MIL-PRF-131 for the activation fluid unit shall be verified by CoC.
3/ The activation fluid solution shall be identified and verified by CoC.
4/ The use of 0.090 inch high density polyethylene for the heating tray shall be verified by CoC.
5/ The pull tab material shall be verified by CoC.
6/ The pull tab pull strength shall be verified by CoC.

7/ The low hydrogen generating heater shall be verified by CoC.

B. Test methods

1. Single heater capacity test.

The objective of the heating capacity test is to verify that a single heater increases the temperature of the water in the polymeric tray by 85°F (from 40°F to 125°F) in 30 minutes or less. In this test, one sub-unit (polymeric tray of water in the heating tray with the heater and the activation fluid unit) is tested. The following procedures are recommended:

- Pre-condition 96 oz. water-filled test tray to 35°F to 40°F.
- Align matching bi-metallic (copper-constantan) pegs of C-10 Locking Connector to bi-metallic holes in C-9 Locking Receptacle. Thread C-10 Locking Receptacle and C-9 together until seated.
- Connect Thermocouple wire installed on Locking Receptacle to data acquisition or computer terminal calibrated to the copper-constantan thermocouple.
- Assemble heater and food tray within the heating tray. Add activation fluid or use activator pouch to activate heater.
- The test shall be conducted at an ambient temperature of 72°F ± 2°F in an explosion-proof exhaust fume hood or sufficiently ventilated environment, away from open flame or potential ignition sources.
- Place sub-unit into a representative heater module box with 10-3/4 by 16-1/4 inch corrugated insert placed over the tray (weather grade corrugated or plastic materials may be used for repeated testing). Activate the sub-unit.
- Record temperature for at least 30 minutes at 1 minute intervals or more frequently.

Comment [C2]: Natick case ES11-053, change 01, 29 Apr 11, to cite low hydrogen generating heater.
Comment [C3]: Natick case ES11-053, change 01, 29 Apr 11, to cite low hydrogen generating heater.
II. Notes

A. Part identifiers and sources of supply

1. **Heater**. The heater is available from:

   Truetech Inc.
   680 Elton Ave.
   Riverhead, NY  11901-2585
   (631) 727-8600

2. **Heater barrier pouch**. The barrier pouch material is available from:

   Winter-Wolff International
   131 Jericho Turnpike
   Jericho, NY 11753
   (516) 997-3300

3. **Activation fluid unit**. The activator pouch is identified as Part # HP-AP-003. The material CADPACK N for the construction of the activation fluid unit pouch is available from:

   Cadillac Products
   5800 Crooks Road
   Troy, Michigan 48098-2830
   (248) 813-8200

   The filled and sealed activation fluid units are available from:

   Heritage Packaging
   625 Fishers Run
   Victor, NY 14564
   (585) 742-3310

4. **Heating tray**. The heating tray is available from:

   Transform Plastics
   45 Prince St.
   Danvers, MA  01923
   (978) 777-1440
5. **Pull tab.** The pull tab is identified as Part # R16-4-WCSHCE-4. The pull tab is available from:

   Southern Imperial  
   1400 Eddy Avenue  
   P.O. Box 2308  
   Rockford, IL  61103  
   (800) 747-4665 x203

6. **Thermocoupled polymeric trays.** Filled thermocoupled polymeric trays or instructions on how to construct them are available from:

   US Army Research, Development and Engineering Command  
   Natick Soldier Research, Development and Engineering Center  
   RDNS-CEG  
   15 Kansas Street  
   Natick, MA 01760-5056  
   (508) 233-4939

7. **Heating Tray with Heater.** The heater sealed into a heating tray is available from:

   Ecomass Technologies  
   4101 Parkstone Heights Drive  
   Austin, TX 78746-7482  
   (512) 306-0020
8. Assembly and instruction sheets. The following assembly and operating instruction sheets are attached:

FIGURE 6. Type II Operating Instructions, for Heater with Hydrogen Generating Warning
FIGURE 7. Type I Operating Instructions, for Heater with No Hydrogen Generation Warning
FIGURE 7. Type I Operating Instructions, for Heater with Low Hydrogen Generation Warning
FIGURE 8. Type II with Eggs Operating Instructions, for Heater with Hydrogen Generating Warning
FIGURE 9. Type II with Eggs Operating Instructions, for Heater with No Hydrogen Generation Warning
FIGURE 9. Type II with Eggs Operating Instructions, for Heater with Low Hydrogen Generation Warning
FIGURE 10. Assembly Instructions for Type II Heater Module
FIGURE 11. Assembly Instructions for Type I Heater Module with Eggs

Assembly and instruction sheets in color are available electronically from:

US Army Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CEG
15 Kansas Street
Natick, MA 01760-5056
(508) 233-6252

B. References.

MIL-PRF-131 - Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat-Sealable

(Copies of these documents are available from https://assist.daps.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Ave, Building 4D, Philadelphia, PA 19111-5094.)

C. Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.
FIGURE 6. Type II Operating Instructions, for Heater with Hydrogen Generating Warning
FIGURE 7. Type II Operating Instructions, for Heater with No Hydrogen Generation

**WARNING**

Heater activation solution causes moderate skin and eye irritation. Avoid contact with eyes, skin, and clothing.

1. Insert water leakage & check valves can form and cause injury.
2. Do not store heater trays after use. Do not drink any water remaining in the heater tray or use it for food items.
3. Do not open heater trays, open the heater module, and do not store food items.
4. Do not eat food contaminated by heating products.
5. Do not store or operate heaters.

**Comment [p5]:** Natick case ES11-053, change 01, 29 Apr 11. Delete figure & replace with new figure 7.
FIGURE 7. Type II Operating Instructions, for Heater with Low Hydrogen Generation

**WARNING**

1. Hot water leakage & steam can burn and cause injury.
2. Discard heating tray after use. Do not drink any water remaining in the heating tray or use it in food items.
3. Do not consume food contaminated by heating products.
4. Dispose of all food waste and soiled utensils and do not retain any food as leftovers.

**NOTE:**
- When potting, there should be 4 strips hanging from each of the Tool Tabs. If there are fewer than 4, the Activator Pegs or Heaters may be opened manually.
- If an Active Pegs is missing or damaged, use 1 tablespoon of salt and 1/2 cup of water to activate the affected helmet.

**Content [C6] Natick case ES11-053, change 01, 29 Apr 11, to cite low hydrogen generating heater.**
FIGURE 8. Type II with Eggs Operating Instructions, for Heater with Hydrogen Generating Warning
**Warning**

1. HAZARDOUS CHEMICAL SOLUTIONS: Protective eye and skin contact may cause permanent injury. Avoid all contact with eyes, skin, and clothes.
2. Do not wash or rinse the UGR-E with water.
3. Do not use the UGR-E in any other configurations other than the ones specified in this operating manual.
4. Do not consume the contents of the UGR-E immediately after opening.
5. Dispose of used UGR-E units and any unused components in a safe manner.

**Operating Instructions**

1. **TABLE OF CONTENTS**: This manual consists of a single sheet of instructions for the UGR-E Type II w/ Eggs, providing complete operating instructions for 15 UGR-E units.

2. **TABLE 1**: Choose the correct operating mode: Manual or Automatic.

3. **TABLE 2**: Select the correct temperature setting for the egg cooking process.

4. **CAUTION**: Once the cooking process is complete, allow the UGR-E to cool down for at least 5 minutes before handling.

**FIGURE 9**: Type II with Eggs Operating Instructions, for Heater with No Hydrogen Generation

**Comment [p7]**: Natick case ED11-053, change 01, 29 Apr 11. Delete figure & replace with new figure 9
FIGURE 9. Type II with Eggs Operating Instructions, for Heater with Low Hydrogen Generation Warning

Comment [C8]: Natick case ES11-053, change 01, 29 Apr 11, to cite low hydrogen generating heater.
Assembly Instructions for Heater Module Type II

COMPONENTS:
1. Heating Tray (quantity 4)
2. Polymeric Food Tray (quantity 4)
3. Activation Fluid Unit (quantity 4)
4. Pull Tab (quantity 2)
5. Sterile Knife (quantity 1)
6. Corrugated Insert (quantity as needed)
7. Heater Module Box (quantity 1)

A. FOLD BACK center tab of Activation Fluid Unit to separate from two small tabs.
B. ATTACH Activation Fluid Units to Heating Trays by pressing holes of short tabs into stubs on tray.
C. FOLD short tabs to insert second hole on same stub.
D. INSERT center tab through slit in Tray cover.
E. CLOSE COVER.

2. INSERT Polymeric Food Trays. Edge of Food Tray holds down Heating Tray cover. STACK Trays. The Entire should be on the bottom and Dessert should be on the top.
CHECK all Food Trays are holding down Heating Tray covers.
CHECK all Activation Fluid Units are securely attached to Heating Trays.
CHECK all Heater Barrier Material Pull Strips extend beyond edge of Heating Trays.

FIGURE 10. Assembly Instructions for Type II Heater Module
FIGURE 10. Assembly Instructions for Type II Heater Module – Continued

3. ATTACH Pull Tabs (Pull Tab teeth point away from Heating Trays):
   A. START with top tooth of Pull Tab & Activation Fluid Unit Tab & Top Tray.
   B. SLIDE the center tab onto the Pull Tab.
   C. MOVE the tab to the highest empty tooth.
   D. REPEAT for bottom three center tabs.
   E. REPEAT Steps A thru D for Second Pull Tab with Heater Barrier Material Pull Strips.

4. INSERT stacked Assembled Trays into Module Box.
   B. CHECK that Pull Tab is not caught on Trays.
   C. PLACE the Corrugated Insert(s) on top of the Assembled Trays.
   D. ADD Instruction Sheet and Stanley Knife to top of Heater Module. Module is now ready for UGR-E Assembly.
Assembly Instructions for Heater Module Type II w/ Eggs

COMPONENTS:
1. Heating Tray (quantity 5)
2. Egg Module Box (quantity 1)
3. Polymeric Food Tray (quantity 3)
4. Activation Fluid Unit (quantity 5)
5. Pull Tab (quantity 2)
6. Sterile Knife (quantity 1)
7. Heater Module Box (quantity 1)

1. A. FOLD BACK center tab of Activation Fluid Unit to separate from two small tabs.
   B. ATTACH Activation Fluid Units to Heating Trays by pressing holes of short tabs into slits on tray.
   C. FOLD short tabs to insert second hole on same side.
   D. INSERT center tab through slit in Tray cover.
   E. CLOSE COVER.

2. INSERT Polymeric Food Trays. Edge of Food Tray holds down Heating Tray cover.
   STACK Trays. The Entries should be on the bottom and Egg Module Box should be on the top.
   CHECK that Food Trays are held down by Heating Tray covers.
   CHECK all Activation Fluid Units are securely attached to Heating Trays.
   CHECK all Heater Barrier Pull Strips extend past Heater Tray.

FIGURE 11. Assembly Instructions for Type II Heater Module with Eggs
FIGURE 11. Assembly Instructions for Type II Heater Module with Eggs – Continued
Custodians:
   Army – GL
   Navy – SA
   Air Force – 35

Preparing activity:
   Army – GL
   (Project 8970-2010-003)

Review Activities:
   Army – MD, QM
   Navy – MC
   DLA – SS

NOTE: The activities listed above were interested in this document as of the date of this
document. Since organizations and responsibilities can change, you should verify the currency of
the information above using ASSIST Online database at https://assist.daps.dla.mil/.
For DLA Troop Support - Subsistence Website Posting

TO: DLA Troop Support DSCP-FTSA

SUBJECT: ES11-053, Improved Citation of Low Hydrogen Generating Heater Modules,
Document Changes to: MIL-DTL-32235/1A, Heater Module, Type I: Heater, Assembly
Required; MIL-DTL-32235/2, Heater Module, Type II: Heater, Assembled; and MIL-DTL-
32235/3, Heater Module, Boil-In-Bag (BIB) Module

1. Flameless heaters are used in the UGR-E™ to heat food in polymeric trays, institutional size
pouches (ISP) and boil-in-bags (BIB). The heaters, when activated by addition of an activation
fluid, initiate an exothermic reaction and generate heat. The current chemical composition
releases significant amounts of hydrogen gas. The hydrogen gas will compete with oxygen in an
enclosed environment and is combustible. New compositions that will provide adequate heating,
produce substantially less hydrogen, and be safer have been perfected. Initially, the term “no
hydrogen generating” heaters was considered, but “low hydrogen generating” heaters is a more
appropriate definition. The re-formulated low hydrogen generating heater releases up to 30 liters
of hydrogen in 60 minutes, which, although it is a lot less hydrogen than that released by the
original heater (up to 330 liters of hydrogen in 60 minutes), is not at a zero level.

2. Since all heaters being used in the heater modules meet the performance requirements cited in
MIL-DTL-32235A, the distinction between them is based on the reduced hydrogen generation of
the newer designs. This will be addressed by developing slightly different operating instructions
without the warnings concerning the risks of hydrogen. Contractual requirements for the
shipment of heaters to assemblers should require the citation of the correct formulation.

3. Another topic of discussion of consideration was citing specific sub-assemblies of components
for the Type I and Type II heaters. There is already a statement in Para 1. of Specification Sheets
1 and 2 that cites “Sub-assemblies are allowed.” The decision is to not develop requirements for
specific sub-assemblies, but to allow manufacturers and assemblers to determine the optimum
method for producing and assembling these modules.

4. And it was determined that the rehydration water pouch in the Boil-In-Bag (BIB) Module
should be slightly larger to accommodate the required volume of water; the pouch dimensions
have been increased.

5. Natick submits the following changes to subject documents for all current, pending and future
procurements until the documents are formally amended or revised:
MIL-DTL-32235/2

SUBJECT: ES11-053, Improved Citation of Low Hydrogen Generating Heater Modules,
Document Changes to: MIL-DTL-32235/1A, Heater Module, Type I: Heater, Assembly
Required; MIL-DTL-32235/2, Heater Module, Type II: Heater, Assembled; and MIL-DTL-
32235/3, Heater Module, Boil-In-Bag (BIB) Module

6. Change 01 to MIL-DTL-32235/1A, Heater Module, Type I: Heater, Assembly Required:
      generating heater is used, it shall generate less than 30 liters of hydrogen in 60 minutes.”
   b. Table I.
      i. After title, add “7/”.
      ii. Add “207 Low hydrogen generating heater generates more than 30 liters in
          60 minutes.”
      iii. At end of table, add “7/ The low hydrogen generating heater shall be verified
           by CoC.”
   c. Para II, A, 7. Delete current references to figures 7, 9, 11, and 13 and insert:
      FIGURE 7. Type I Heater Assembly, for Heater with Low Hydrogen Generation
      Warning
      FIGURE 9. Type I Heater Assembly with Eggs, for Heater with Low Hydrogen
      Generation Warning
      FIGURE 11. Type I Operating Instructions, for Heater with Low Hydrogen Generation
      Warning
      FIGURE 13. Type I with Eggs Operating Instructions, for Heater with Low Hydrogen
      Generation Warning
   d. Figures. Delete current figures 7, 9, 11 and 13 and replace with attached figures.

7. Change 01 to MIL-DTL-32235/2, Heater Module, Type II: Heater, Assembled:
      generating heater is used, it shall generate less than 30 liters of hydrogen in 60 minutes.”
   b. Table I.
      i. After title, add “7/”.
      ii. Add “207 Low hydrogen generating heater generates more than 30 liters in
          60 minutes.”
      iii. At end of table, add “7/ The low hydrogen generating heater shall be verified
           by CoC.”
MIL-DTL-32235/2

29 Apr 11

SUBJECT: ES11-053, Improved Citation of Low Hydrogen Generating Heater Modules,
Document Changes to: MIL-DTL-32235/1A, Heater Module, Type I: Heater, Assembly
Required; MIL-DTL-32235/2, Heater Module, Type II: Heater, Assembled; and MIL-DTL-
32235/3, Heater Module, Boil-In-Bag (BIB) Module

c. Para II, A, 8. Delete current references to figures 7 and 9 and insert:
   FIGURE 7. Type I Operating Instructions, for Heater with Low Hydrogen Generation
   Warning
   FIGURE 9. Type II with Eggs Operating Instructions, for Heater with Low Hydrogen
   Generation Warning

d. Figures. Delete current figures 7 and 9 and replace with attached figures.

8. Change 01 to MIL-DTL-32235/3, Heater Module, Boil-In-Bag (BIB) Module:
genrating heater is used, it shall generate less than 30 liters of hydrogen in 60 minutes.”
   b. Para I, D. Delete “9-1/2 by 14 inches” and substitute “11 by 14 inches”.
   c. Table I.
      i. After title, add “3/”.
      ii. Add “207 Low hydrogen generating heater generates more than 30 liters in
          60 minutes.”
      iii. At end of table, add “3/ The low hydrogen generating heater shall be verified
           by CoC.”
   d. Para II, A,5. Delete current reference to figure 2 and insert:
      FIGURE 2. BIB Module Operating Instructions, for Heater with Low Hydrogen
      Generation Warning
   e. Figures. Delete current figure 2 and replace with attached figure.

9. Attached are Change 01 to MIL-DTL-32235/1A, Change 01 to MIL-DTL-32235/2, and
   Change 01 to MIL-DTL-32235/3, dated 29 April 2011, with changes highlighted.