

**G. PATRICK CIVILLE**  
**CIVILLE & TANG, PLLC**  
330 HERNAN CORTEZ AVENUE, SUITE 200  
HAGÅTÑA, GUAM 96910  
TELEPHONE: (671) 472-8868/69  
FACSIMILE: (671) 477-2511  
EMAIL: pciville@civilletang.com

*Attorneys for Defendant  
The 3M Company*

**IN THE UNITED STATES DISTRICT COURT OF GUAM**

GOVERNMENT OF GUAM,

Plaintiff,

vs.

THE 3M COMPANY; TYCO FIRE  
PRODUCTS LP; CHEMGUARD, INC.;  
BUCKEYE FIRE EQUIPMENT  
COMPANY; KIDDE-FENWAL, INC.;  
NATIONAL FOAM, INC.; E.I. DU PONT  
DE NEMOURS AND CO.; and THE  
CHEMOURS COMPANY,

Defendants.

CIVIL ACTION NO. \_\_\_\_\_

**NOTICE OF REMOVAL**

Defendant The 3M Company (“3M”), by undersigned counsel, hereby gives notice of removal of this action, pursuant to 28 U.S.C. §§ 1442(a)(1) and 1446, from the Superior Court of Guam, Hagåtña, Guam, to the District Court of Guam. As grounds for removal, 3M states as follows:

**PRELIMINARY STATEMENT**

1. Plaintiff Government of Guam (“Government”) seeks to hold 3M and certain other defendants liable based on their alleged conduct in designing, manufacturing, and selling firefighting chemical agents—aqueous film-forming foam (“AFFF”)—which were developed for

sale to the United States military and others pursuant to government contracts and in accordance with the military's rigorous specifications. 3M intends to assert the federal "government contractor" defense in response to the Government's claims. As multiple courts have previously ruled in similar cases brought against AFFF manufacturers, 3M is entitled to remove this action under the federal officer removal statute, 28 U.S.C. § 1442(a)(1), to have its federal defense adjudicated in a federal forum. *See, e.g., Ayo v. 3M Comp.*, 2018 WL 4781145, at \*6-15 (E.D.N.Y. Sept. 30, 2018); *In re Aqueous Film-Forming Foams Prods. Liab. Litig.*, ("*In re AFFF*"), No. 2:18-mn-2873, 2019 WL 2807266, at \*2 (D.S.C. May 24, 2019). Such removal "fulfills the federal officer removal statute's purpose of protecting persons who, through contractual relationships with the Government, perform jobs that the Government otherwise would have performed." *Isaacson v. Dow Chem. Co.*, 517 F.3d 129, 133 (2d Cir. 2008).

### **PLAINTIFFS' SUMMONS & COMPLAINT**

2. This action was filed on September 5, 2019 in the Superior Court of Guam, Hagatna, Guam, bearing Civil Case No. CV 1080-19. (Ex. A, Summons and Complaint.) Venue for the removal of this action is proper in this Court pursuant to 28 U.S.C. § 1442(a) and 48 U.S.C. §§ 1424 and 1424-2 because the Superior Court of Guam, Hagåtña, Guam, is located within the District of Guam.<sup>1</sup>

3. 3M was served with a copy of the Summons and Complaint on October 14, 2019. Accordingly, this Notice of Removal is timely under 28 U.S.C. § 1446(b).

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<sup>1</sup> Under 28 U.S.C. § 1442(a), a civil action commenced in a "State court" is removable to the "district court of the United States embracing the place wherein it is pending." Pursuant to 48 U.S.C. §§ 1424 and 1424-2, the Superior Court of Guam is a "State court," and the District Court of Guam is a "district court of the United States" for purposes of the federal removal statutes. *See EIE Guam Corp. v. Long Term Credit Bank of Japan, Ltd.*, 322 F.3d 635, 642 nn. 4 & 5 (9th Cir. 2003).

4. 3M is not required to notify or obtain the consent of any other defendant in this action to remove this action as a whole under § 1442(a)(1). *See Durham v. Lockheed Martin Corp.*, 445 F.3d 1247, 1253 (9th Cir. 2006).

5. The Government purports to bring this action as “the trustee for the benefit of its citizens of all natural resources within its jurisdiction,” and alleges that it “may act in its parens patriae capacity to protect its ‘quasi-sovereign’ interests, including its interest in the health and well-being of its residents and the integrity of its natural resources.” (Compl. ¶ 13.) The Government generally alleges that the defendants, including 3M, manufactured AFFF products containing perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA) and/or compounds that degrade into those chemicals; that the defendants marketed and sold these products to the U.S. Government and other purchasers; and that these products were used or discharged at sites in Guam, including military facilities like former Naval Air Station Agana. (*See, e.g., id.* ¶¶ 1-3, 5-8, 14-22, 27-29, 39-45, 105-07.) The Government further alleges that these products have resulted in threat or injury to drinking water, public health, the environment, and Guam’s natural resources. (*See, e.g., id.* ¶¶ 4, 6-7, 9-11, 13, 30-38, 84-86, 108-17.)

6. The Government alleges, among other things, that the defendants’ AFFF products were defectively designed (*id.* ¶¶ 107-08), and asserts claims for strict products liability-design defect (*id.*, First Count), strict products liability-failure to warn (*id.*, Second Count), negligence (*id.*, Third Count), public nuisance (*id.*, Fourth Count), and alleged violations of the Consumer Protection Act (*id.*, Fifth Count). The Government seeks compensatory damages “for all costs to investigate, clean up and remove, restore, treat, monitor, and otherwise respond to PFOS and PFOA contamination resulting from Defendants’ AFFF, so the contaminated natural resources are restored to their original condition, and for all damages to compensate the residents of Guam

for the lost use and value of these natural resources during all times of injury caused by PFOS and PFOA, and for such orders as may be necessary to provide full relief to address the threat of contamination to Guam.” (*See id.*, Prayer For Relief.) The Government also seeks entry of an order requiring Defendants “to abate or mitigate the PFOS and/or PFOA contamination that they [allegedly] caused at and around sites within the State,” as well as civil penalties, restitution, disgorgement, and exemplary and punitive damages. (*See id.*)

7. Pursuant to 28 U.S.C. § 1446(d), a copy of this Notice of Removal is being served by 3M upon all adverse parties to this case, and a copy is being filed with the Clerk of the Superior Court of Guam, Hagåtña, Guam. The documents attached hereto as Exhibit A constitute all of the process and pleadings served upon 3M in this action to date, and the documents attached as Exhibits A and B constitute all of the process, pleadings and orders filed in this action to date, as required to be submitted under 28 U.S.C. § 1446(a).

8. 3M reserves the right to amend or supplement this Notice of Removal.

9. If any question arises as to the propriety of the removal of this action, 3M requests the opportunity to present a brief and oral argument in support of removal.

**REMOVAL IS PROPER UNDER THE FEDERAL  
OFFICER REMOVAL STATUTE, 28 U.S.C. § 1442(A)(1)**

10. Removal here is proper under 28 U.S.C. § 1442(a)(1), which provides for removal when a defendant is sued for acts undertaken at the direction of a federal officer. Removal is appropriate under this provision where the removing defendant establishes that: (1) the defendant is a “person” under the statute; (2) the defendant was “acting under” the direction of a federal officer when it engaged in the allegedly tortious conduct; (3) the defendant was acting “under color of” federal office at the time of the allegedly tortious conduct; and (4) the defendant raises a “colorable” federal defense. *See Mesa v. California*, 489 U.S. 121, 124-25, 129-31, 134-35

(1989); *Goncalves by and through Goncalves v. Rady Children's Hosp.* S.D., 865 F.3d 1237, 1244 (9th Cir. 2017); *Durham*, 445 F.3d at 1251; *Jacks v. Meridian Res. Co.*, 701 F.3d 1224, 1230 (8th Cir. 2012).

11. Removal rights under the federal officer removal statute, 28 U.S.C. § 1442, are much broader than under the general removal statute, 28 U.S.C. § 1441. Suits against defendants acting on behalf of federal officers “may be removed despite the nonfederal cast of the complaint; the federal-question element is met if the defense depends on federal law.” *Jefferson Cty. v. Acker*, 527 U.S. 423, 431 (1999). This is because § 1442 “protect[s] federal officers” and “guarantee[s] its agents access to a federal forum if they are sued or prosecuted.” *Durham*, 445 F.3d at 1253. This important federal policy “should not be frustrated by a narrow, grudging interpretation of § 1442(a)(1).” *Willingham v. Morgan*, 395 U.S. 402, 407 (1969). To the contrary, the statute must be “liberally construed” in favor of removal. *Durham*, 445 F.3d at 1252 (quoting *Colorado v. Symes*, 286 U.S. 510, 517 (1932)).

12. All requirements for removal under § 1442(a)(1) are satisfied here. Indeed, the Government’s complaint is very similar to those brought by the State of New York in cases that were removed to federal court by Tyco (also a defendant in this action) and subsequently transferred to the U.S. District Court for the District of South Carolina for inclusion in the *In re AFFF MDL*. See *State of New York v. 3M Co.*, No. 2:19-cv-01022, Compl., Dkt. 1, Ex. A (D.S.C. Nov. 9, 2018)); *State of New York v. 3M Co.*, No. 2:19-cv-02123, Compl., Dkt. 1, Ex. A (D.S.C. June 14, 2019). The State of New York moved to remand both cases to state court, asserting in part that Tyco was not entitled to removal under § 1442(a)(1). Judge Gergel denied the State of New York’s motions. In both cases, he held that Tyco had satisfied all elements of the federal officer removal statute, “entitling Tyco to have removed New York’s tort claims and

Tyco’s federal defense to federal court.” *In re AFFF*, 2019 WL 2807266, at \*2; *In re AFFF*, No. No. 2:18-mn-2873, Order, Dkt. 320, at 5 (Sept. 27, 2019) (same); *see also id.*, Dkt. 325, at 3-6 (Oct. 1, 2019) (denying public water utility’s motion to remand because Tyco/Chemguard satisfied all elements of federal officer removal statute); *Ayo*, 2018 WL 4781145, at \*6-15 (in case subsequently transferred to the MDL, denying motion to remand and finding that federal officer removal was proper in case against 3M and other manufacturers of AFFF).

#### **A. MilSpec AFFF**

13. Since the 1960s, the United States military has used AFFF that meets military specifications (“MilSpec AFFF”) on military bases, airfields, and Navy ships—settings where fuel fires are inevitable and potentially devastating—to train its personnel, put out fires, save lives, and protect property. Indeed, the United States Naval Research Laboratory developed AFFF in response to deadly, catastrophic fires aboard the aircraft carriers USS Forrestal in 1967 and USS Enterprise in 1969.<sup>2</sup> Decades later, the Naval Research Laboratory described the development of AFFF as “one of the most far-reaching benefits to worldwide aviation safety.”<sup>3</sup>

14. The manufacture and sale of AFFF procured by the military is governed by rigorous military specifications created and administered by Naval Sea Systems Command.<sup>4</sup> All such AFFF products must be “qualified for listing on the applicable Qualified Products List” prior to military procurement.<sup>5</sup> Prior to such listing, a “manufacturer’s … products are examined,

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<sup>2</sup> See Press Release 71-09r, U.S. Naval Research Lab., Navy Researchers Apply Science to Fire Fighting (Oct. 23, 2009), <https://tinyurl.com/y2jq4q4w>.

<sup>3</sup> U.S. Navy, NRL/MR/1001-06-8951, U.S. Naval Research Lab., The U.S. Naval Research Laboratory (1923-2005): Fulfilling the Roosevelts’ Vision for American Naval Power, at 37 (June 30, 2006) (“Fulfilling the Roosevelts’ Vision”), <http://bit.ly/2mujJds>.

<sup>4</sup> See Mil-F-24385 (1969). The November 1969 MilSpec and all its revisions and amendments through September 2017 are available at <https://tinyurl.com/yxwotjpg>. The 2019 amendment is attached as Ex. C.

<sup>5</sup> *Id.* § 3.1.

tested, and approved to be in conformance with specification requirements.”<sup>6</sup> The MilSpec designates Naval Sea Systems Command as the agency responsible for applying these criteria and determining whether AFFF products satisfy the MilSpec’s requirements.<sup>7</sup> After a product is added to the Qualified Products List, “[c]riteria for retention of qualification are applied on a periodic basis to ensure continued integrity of the qualification status.”<sup>8</sup> Naval Sea Systems Command “reserves the right to perform any of the [quality assurance] inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.”<sup>9</sup>

15. From its inception until very recently, the MilSpec included the express requirement that MilSpec AFFF contain “fluorocarbon surfactants,” the chemical class that includes PFOA and PFOS.<sup>10</sup> The current MilSpec expressly contemplates the presence of PFOA and PFOS (subject to recently imposed limits) in AFFF formulations.<sup>11</sup> Indeed, the current MilSpec recognizes that it is not yet technically feasible for manufacturers to completely eliminate PFOA and PFOS “while still meeting all other military specification requirements.”<sup>12</sup>

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<sup>6</sup> Dep’t of Defense SD-6, Provisions Governing Qualification 1 (Feb. 2014), <https://tinyurl.com/y5asm5bw>.

<sup>7</sup> See, e.g., Ex. C, MIL-PRF-24385F(3) at 18 (2019). The cited MilSpec designates Naval Sea Systems Command as the “Preparing Activity.” The “Preparing Activity” is responsible for qualification. (See Dep’t of Defense SD-6 at 3.)

<sup>8</sup> Dep’t of Defense SD-6 at 1.

<sup>9</sup> See, e.g., MIL-PRF-24385F(3) § 4.1 (2019).

<sup>10</sup> See Mil-F-24385 § 3.2 (1969); MIL-PRF-24385F(2) § 3.2 (2017). In May 2019, the MilSpec was revised to drop the explicit requirement that the surfactants in the product be “fluorocarbon.” See MIL-PRF-24385F(3) § 3.2 (2019). But under current technology, the only AFFF products capable of meeting the MilSpec’s stringent performance requirements—and the only ones listed on the military’s Qualified Product List—are those containing fluorocarbon surfactants. Thus, as a practical matter, the MilSpec still requires fluorocarbon surfactants.

<sup>11</sup> See Ex. C, MIL-PRF-24385F(3) § 6.6 & Tables 1, 3 (2019).

<sup>12</sup> Id. § 6.6.

**B. The “Person” Requirement Is Satisfied**

16. The first requirement for removal under the federal officer removal statute is satisfied because 3M (a corporation) is a “person” under the statute. For purposes of § 1442(a)(1), the term “person” includes “‘companies, associations, firms, [and] partnerships.’” *Papp v. Fore-Kast Sales Co.*, 842 F.3d 805, 812 (3d Cir. 2016) (quoting 1 U.S.C. § 1). The Ninth Circuit has likewise recognized that a non-natural entity is a “person” for purposes of § 1442(a)(1). *See Goncalves*, 865 F.3d at 1244.

**C. The “Acting Under” Requirement Is Satisfied**

17. The second requirement (“acting under” a federal officer) is satisfied when an entity assists or helps carry out the duties or tasks of a federal officer. *Goncalves*, 865 F.3d at 1245. The words “acting under” are to be interpreted broadly. *Id.* Federal courts “have explicitly rejected the notion that a defendant could only be ‘acting under’ a federal officer if the complained-of conduct was done at the specific behest of the federal officer or agency.” *Papp*, 842 F.3d at 813.

18. The requirement is met here because the Government challenges the defendants’ alleged conduct in providing vital products “that, in the absence of Defendants, the Government would have had to produce itself.” *Isaacson*, 517 F.3d at 137. MilSpec AFFF is a mission critical military product that, without the support of private contractors, the government would have to produce for itself. *See Ayo*, 2018 WL 4781145, at \*9 (describing MilSpec AFFF as a “mission critical” and “life-saving product” used by all branches of the U.S. armed forces and NATO members). The Naval Research Laboratory states that, “[a]lthough [it] was responsible for the original concepts and formulations, it was necessary to elicit the aid of the chemical industry to

synthesize the fluorinated intermediates and agents to achieve improvements in formulations.”<sup>13</sup>

Accordingly, the military has long depended upon outside contractors like 3M to develop and supply AFFF. *See Ayo*, 2018 WL 4781145, at \*8-9 (holding that 3M and other AFFF manufacturers were “acting under” a federal officer in connection with the manufacture and sale of MilSpec AFFF); *In re AFFF*, 2019 WL 2807266, at \*2 (finding that “acting under” requirement was satisfied because Tyco demonstrated it was manufacturing AFFF under the guidance of the U.S. military).

19. The Government’s own allegations confirm that 3M was “acting under” federal officers of the Department of Defense and its agencies when manufacturing and selling MilSpec AFFF products allegedly used in Guam. The Government alleges that the defendants, including 3M, made these products for, and sold them to, the U.S. military, which used them in Guam:

- “From the 1960s through 2001, the United States Department of Defense purchased AFFF exclusively from 3M and Tyco/Ansul.” (Compl. ¶ 41.)
- “Since the creation of AFFF in the 1960s, Defendants have sold their AFFF products to military … facilities … in Guam.” (*Id.* ¶ 5.)
- “Defendants advertised and sold AFFF to the United States government as well as Guam....” (*Id.* ¶ 29.)
- “...Guam International Airport (which includes the former Naval Air Station Agana) ha[s] been identified as having AFFF-related contamination. (*Id.* ¶ 7.)<sup>14</sup>
- “As investigation continues, it is expected that further contamination from ... Defendants’ AFFF products will be uncovered in Guam, especially given the U.S. military’s historical and current presence on the Island.” (*Id.* ¶ 8.)

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<sup>13</sup> *Fulfilling the Roosevelts’ Vision* at 37.

<sup>14</sup> Independent of its status as a former military installation, Guam International Airport is a so-called Part 139 Airport. *See* [https://www.faa.gov/airports/airport\\_safety/part139\\_cert/?p1=carriers](https://www.faa.gov/airports/airport_safety/part139_cert/?p1=carriers). The U.S. government requires Part 139 airports to use AFFF meeting MilSpec standards. *See* FAA Part 139 CertAlert 06-02, Aqueous Film Forming Foam (AFFF) meeting MIL-F-24385 (Feb. 8, 2006).

20. In designing, manufacturing, and supplying the MilSpec AFFF products at issue, 3M acted under the direction and control of one or more federal officers. Specifically, 3M acted in accordance with detailed specifications, promulgated by Naval Sea Systems Command, that govern AFFF formulation, performance, testing, storage, inspection, packaging, and labeling.<sup>15</sup> Further, the AFFF products in question were subject to various tests by the United States Navy before and after being approved for use by the military and for inclusion on the Qualified Products List maintained by the United States Department of Defense.<sup>16</sup>

#### **D. The Causation Requirement Is Satisfied**

21. The third requirement, that a defendant's actions were taken "under color of federal office ... has come to be known as the causation requirement." *Isaacson*, 517 F.3d at 137 (internal quotation marks, alterations, and citation omitted). Like the "acting under" requirement, "the hurdle erected by [this] requirement is quite low." *Goncalves*, 865 F.3d at 1245 (quoting *Isaacson*, 517 F.3d at 137). Courts "credit Defendants' theory of the case when determining whether [this] causal connection exists." *Isaacson*, 517 F.3d at 137.<sup>17</sup>

22. "To show causation, Defendants must only establish that the act that is the subject of Plaintiffs' attack ... occurred *while* Defendants were performing their official duties." *Isaacson*, 517 F.3d at 137-38 (emphasis in original). Here, the Government's claims against 3M arise at least in part from its production and sale of AFFF according to military specifications. The Government alleges that the use of PFOS and PFOA in AFFF rendered 3M's products defective. 3M contends that the use of such chemicals was required by military specifications.

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<sup>15</sup> See Mil-F-24385 (1969) and subsequent revisions and amendments, cited in footnote 4, *supra*.

<sup>16</sup> See Dep't of Defense, SD-6 at 1.

<sup>17</sup> The "Acting Under" and "Under Color Of" prongs overlap. See, e.g., *Durham*, 445 F.3d at 1251. Both "are satisfied if the actions subject to suit resulted directly from government specifications or direction." *Albrecht v. A.O. Smith Water Prods.*, 2011 WL 5109532, at \*5 (S.D.N.Y. 2011).

The conflict is apparent: MilSpec AFFF was developed for use by the military, and was designed to meet specifications established by the Department of Defense. The design choices the Government is attempting to impose via state tort law would create a conflict in which 3M could not “comply with both its contractual obligations and the state-prescribed duty of care.” *Boyle v. United Tech. Corp.*, 487 U.S. 500, 509 (1988); *see also* *Ayo*, 2018 WL 4781145, at \*9 (“[T]here is evidence of a ‘casual connection’ between the use of PFCs in AFFF and the design and manufacture of AFFF for the government.”); *accord In re AFFF*, 2019 WL 2807266, at \*3.

23. Although the Government alleges that there existed “reasonably safer and feasible alternatives to [Defendants’] AFFF products, and the omission of such alternative designs rendered their products unreasonably safe” (Compl. ¶ 111), that is both incorrect and immaterial. The Government cannot defeat federal-officer removal based on allegations directly at odds with the MilSpec and the judgment of the federal officers who administer it. Further, “even if Plaintiff were to prove that the [alleged] contamination occurred because of an act not specifically contemplated by the government contract, it is enough that the contracts gave rise to the contamination.” *Isaacson*, 517 F.3d at 138. “[W]hether the challenged act was outside the scope of Defendants’ official duties, or whether it was specifically directed by the federal Government, is one for the federal—not state—courts to answer.” *Id.*

#### **E. The “Colorable Federal Defense” Requirement Is Satisfied**

24. The fourth requirement (“colorable federal defense”) is satisfied by 3M’s assertion of the government contractor defense. The Ninth Circuit has recognized that this defense supports removal under § 1442(a)(1). *See Leite v. Crane Co.*, 749 F.3d 1117, 1124 (9th Cir. 2014).

25. At the removal stage, a defendant need only show that its government contractor defense is “colorable.” *Leite*, 749 F.3d at 1124 (quoting *Jefferson Cty.*, 527 U.S. at 407). “To be ‘colorable,’ the defense need not be ‘clearly sustainable,’ as the purpose of the statute is to secure that the validity of the defense will be tried in federal court.” *Isaacson*, 517 F.3d at 139 (citation omitted). At the removal stage, the inquiry “is purely jurisdictional, and neither the parties nor the district courts should be required to engage in fact-intensive motion practice, pre-discovery, to determine the threshold jurisdictional issue.” *Cuomo v. Crane Co.*, 771 F.3d 113, 116 (2d Cir. 2014) (quoting *Kircher v. Putnam Funds Trust*, 547 U.S. 633, 644 n. 12 (2006)).<sup>18</sup> Moreover, “this inquiry is undertaken whilst viewing the facts in the light most favorable to Defendants.” *Hagen v. Benjamin Foster Co.*, 739 F. Supp. 2d 770, 783-84 (E.D. Pa. 2010). “Precisely in those cases where a plaintiff challenges the factual sufficiency of the defendant’s defense, the defendant should ‘have the opportunity to present [his] version of the facts to a federal, not a state, court.’” *Cuomo*, 771 F.3d at 116 (citation omitted).

26. Under the government contractor defense, the defendant is not liable for alleged defects or negligence with respect to military equipment or supplies “when (1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States.” *Boyle*, 487 U.S. at 512.

27. 3M has satisfied these elements for purposes of removal. As discussed above, Naval Sea Systems Command approved reasonably precise specifications, governing AFFF formulation, performance, testing, storage, inspection, packaging, and labeling.<sup>19</sup> Indeed, 3M’s

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<sup>18</sup> See also *Kraus v. Alcatel-Lucent*, 2018 WL 3585088, at \*2 (E.D. Pa. July 25, 2018) (“A court does not ‘determine credibility, weigh the quantum of evidence or discredit the source of the defense’ at this stage. Instead, [the court] only determine[s] whether there are sufficient facts alleged to raise a colorable defense.”).

<sup>19</sup> See Mil-F-24385 (1969) and subsequent revisions and amendments, cited in footnote 4, *supra*.

products appeared on the DOD Qualified Products Listing,<sup>20</sup> which could have happened only if Naval Sea Systems Command had first determined that they conformed to the MilSpec.<sup>21</sup> *See Ayo*, 2018 WL 4781145, at \*13 (“[T]here is colorable evidence that Manufacturing Defendants’ Mil-Spec AFFF is not a stock product and that the government approved reasonably precise specifications requiring them to use PFCs, including PFOS and PFOA, in their products.”); *see also id.* (“There is also colorable evidence … that Manufacturing Defendants’ AFFF products conformed to the government’s reasonably precise specifications.”); *In re AFFF*, 2019 WL 2807266, at \*3 (finding that Tyco demonstrated a colorable defense “where it contends that its AFFF products were manufactured according to the U.S. military’s MilSpec specifications”).

28. Moreover, the U.S. government was adequately informed regarding alleged product-related “dangers,” *Boyle*, 487 U.S. at 512, to exercise its discretionary authority in specifying and procuring MilSpec AFFF. The military specifications have long included testing protocols and requirements for toxicity, chemical oxygen, and biological demand.<sup>22</sup> Indeed, it is clear that the United States has long understood that AFFF may contain or break down into PFOS and/or PFOA, that AFFF constituents can migrate through the soil and potentially reach groundwater, and that it has been reported that this may raise environmental or health issues.<sup>23</sup>

29. In fact, as early as October 1980, a report supported by the U.S. Navy Civil Engineering Laboratory, U.S. Air Force Engineering Service Center, and the U.S. Army Medical Research and Development Command stated that AFFF contained fluorocarbons and that “[a]ll

<sup>20</sup> MIL-F-24385 QPL/QPD History for Type 3 AFFF (Oct. 24, 2014), <http://www.dcfpnavymil.org/Systems/AFFF/QPL%2024385%20HISTORY%20-%20TYPE%203.pdf>; MIL-F-24385 QPL/QPD History for Type 6 AFFF (Oct. 24, 2014), <http://www.dcfpnavymil.org/Systems/AFFF/QPL%2024385%20HISTORY%20-%20TYPE%206.pdf>.

<sup>21</sup> *See Dep’t of Defense SD-6 at 1.*

<sup>22</sup> *See, e.g.*, MIL-F-24385 §§ 3.16 & 4.7.16 (Rev. May 2, 1977).

<sup>23</sup> *See, e.g.*, EPA, Revised Draft Hazard Assessment of Perfluorooctanoic Acid and its Salts, at 1-6 (Nov. 4, 2002) (excerpt).

of the constituents resulting from firefighting exercises are considered to have adverse effects environmentally.”<sup>24</sup> In June 1991, the Air Force stated that past Air Force fire training activities resulted in “adverse environmental impact,” including “soil contamination” and the “potential” for “groundwater contamination.”<sup>25</sup> More recently, in a November 2017 report to Congress, the Department of Defense acknowledged the concerns raised by the EPA regarding PFOS and PFOA in drinking water. Nonetheless, it still described AFFF containing PFOS or PFOA as a “mission critical product [that] saves lives and protects assets by quickly extinguishing petroleum-based fires.”<sup>26</sup> Until just earlier this year, Naval Sea Systems Command continued to expressly require that MilSpec AFFF contain “fluorocarbon surfactants,”<sup>27</sup> and even today the MilSpec contemplates the presence of “PFOS” and “PFOA” in AFFF formulations.<sup>28</sup> See *Ayo*, 2018 WL 4781145, at \*12 (“That the DoD knows of the alleged risks of PFC-based AFFF products but continues to purchase them supports the position that the government approved reasonably precise specifications for the claimed defective design.”); *In re AFFF*, 2019 WL 2807266, at \*3 (“As to whether Tyco adequately informed the U.S. military of dangers associated with its AFFF products of which the military were not already aware, Tyco points to materials such as a November 2017 Department of Defense report to Congress, in which the agency acknowledged the [EPA’s] stated concerns with PFOS/PFOA in drinking water . . .”).

30. At a minimum, these facts constitute colorable evidence that Naval Sea Systems Command "made a discretionary determination" regarding the formulation of MilSpec AFFF

<sup>24</sup> See Edward S. K. Chian et al., *Membrane Treatment of Aqueous Film Forming Foam (AFFF) Wastes for Recovery of Its Active Ingredients* 1 (Oct. 1980), [http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&docname=GetTRDoc.pdf&Location=U2&docname=GetTRDoc.pdf](http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&docname=GetTRDoc.pdf&GetTRDoc.pdf&Location=U2&docname=GetTRDoc.pdf).

<sup>25</sup> USAF, Engineering Technical Letter ETL 91-4: Site Selection Criteria for Fire Protection Training Areas 2 (June 14, 1991).

<sup>26</sup> Dep't of Defense, Aqueous Film Forming Foam Report to Congress, at 1-2 (Oct. 2017) (pub. Nov. 3, 2017), <https://tinyurl.com/y5un3zq8>.

<sup>27</sup> See MIL-PRF-24385F(2) § 3.2 (2017).

<sup>28</sup> MII-PRF-24385F(3) § 6.6 & Tables 1, 3.

after weighing the fire-suppression benefits against the alleged risks. *See In re Agent Orange Prod. Liab. Litig.*, 517 F.3d 76, 90 (2d Cir. 2008); *see also Albrecht v. A.O. Smith Water Prods.*, 2011 WL 5109532, at \*5 (S.D.N.Y. 2011) (“A defendant is not required to warn the government where ‘the government knew as much or more than the defendant contractor about the hazards of the product.’”) (citation omitted). Where, as here, the government has exercised “discretionary authority over areas of significant federal interest such as military procurement,” the government contractor defense applies. *In re Agent Orange Prod. Liab. Litig.*, 517 F.3d at 89-90.

WHEREFORE, 3M hereby removes this action from the Superior Court of Guam to this Court.

Respectfully submitted this 4<sup>th</sup> day of November, 2019.

**CIVILLE & TANG, PLLC**

By: /s/ G. Patrick Civille  
**G. PATRICK CIVILLE**  
Attorneys for Defendant  
The 3M Company

**CERTIFICATE OF SERVICE**

I certify that on November 4, 2019, I caused a true and correct copy of the foregoing **NOTICE OF REMOVAL**, with its Exhibits, to be served on counsel of record for Plaintiff by hand delivery and on Defendants by United States Postal Service first-class mail and FedEx at their respective addresses below:

**Office of the Attorney General****Leevin Taitano Camacho**

Attorney General of Guam

Litigation Division

590 S. Marine Corps Drive

Suite 802, ITC Building

Tamuning, Guam 96913

*Counsel for Plaintiff***Tyco Fire Products LP**

One Stanton Street

Marinette, WI 54143-2542

*Defendant***Chemguard, Inc.**

One Stanton Street

Marinette, WI 54143-2542

*Defendant***Buckeye Fire Equipment Company**

110 Kings Road

Kings Mountain, NC 28086

*Defendant***Kidde-Fenwal, Inc.**

400 Main Street

Ashland, MA 01721

*Defendant***National Foam, Inc.**

141 Junny Road

Angier, NC 27501

*Defendant***E.I. Du Pont De Nemours and Co.**

974 Centre Road

Wilmington, DE 19805

*Defendant***The Chemours Company**

1007 Market Street

P.O. Box 2047

Wilmington, DE 19899

*Defendant*

DATED this 4<sup>th</sup> day of November 2019.

**CIVILLE & TANG, PLLC**

By: /s/ G. Patrick Civille

**G. PATRICK CIVILLE**

Attorneys for Defendant

*The 3M Company*

# EXHIBIT A

9/6/19 AM



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:51

CLERK OF COURT

By: \_\_\_\_\_

**Office of the Attorney General**  
**Leevin Taitano Camacho**  
 Attorney General of Guam  
**Litigation Division**  
 590 S. Marine Corps Drive  
 Suite 802, ITC Building  
 Tamuning, Guam 96913 • USA  
 (671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

**Attorneys for the Government of Guam**

**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM,	)	CIVIL CASE NO. CV	<u>CV 1080-19</u>
	)		
Plaintiff,	)		
	)		
vs.	)		
	)		
THE 3M COMPANY; TYCO FIRE	)	SUMMONS	
PRODUCTS LP; CHEMGUARD, INC.;	)		
BUCKEYE FIRE EQUIPMENT	)		
COMPANY; KIDDE-FENWAL, INC.;	)		
NATIONAL FOAM, INC.; E.I. DU PONT	)		
DE NEMOURS AND CO.; and THE	)		
CHEMOURS COMPANY,	)		
	)		
Defendants.)			

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**TO: THE 3M COMPANY**

C/O THE CORPORATION TRUST COMPANY, as Registered Agent  
 CORPORATION TRUST CENTER  
 1209 ORANGE ST.  
 WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

  
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:33

CLERK OF COURT

By: \_\_\_\_\_

**Office of the Attorney General**

**Leevin Taitano Camacho**

Attorney General of Guam

**Litigation Division**

590 S. Marine Corps Drive  
Suite 802, ITC Building  
Tamuning, Guam 96913 • USA  
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**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM, ) CIVIL CASE NO. CV CV 1080-19  
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Plaintiff, )  
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THE 3M COMPANY, TYCO FIRE )  
PRODUCTS LP; CHEMGUARD, INC.; )  
BUCKEYE FIRE EQUIPMENT )  
COMPANY; KIDDE-FENWAL, INC.; )  
NATIONAL FOAM, INC.; E.I. DU PONT )  
DE NEMOURS AND CO.; and THE )  
CHEMOURS COMPANY, )  
)  
Defendants. )

**COMPLAINT WITH JURY DEMAND**

Plaintiff, Government of Guam ("Guam"), by and through Leevin T. Camacho, Attorney General of Guam ("Attorney General"), hereby files this Complaint against Defendants THE 3M COMPANY; TYCO FIRE PRODUCTS LP; CHEMGUARD, INC.; BUCKEYE FIRE EQUIPMENT COMPANY; KIDDE-FENWAL, INC.; NATIONAL FOAM, INC.; E.I. DU PONT DE NEMOURS AND CO.; and THE

CHEMOOURS COMPANY (collectively, “Defendants”).

### INTRODUCTION

1. Guam brings this civil action against Defendants pursuant to the common law of Guam and the public nuisance statute for injuries to natural resources of Guam, including groundwater, as a result of releases of perfluorooctane sulfonic acid (“PFOS”) and perfluorooctanoic acid (“PFOA”) into the environment due to the storage, handling, use, training with, testing equipment with, other discharges, and disposal of Defendants’ aqueous film-forming foam (“AFFF”) and related products. PFOS and PFOA are two persistent, bioaccumulative, and toxic substances within the class of man-made chemicals known as per- and polyfluoroalkyl substances (“PFAS”). Defendants’ AFFF products were used in Guam, causing natural resources to be contaminated with PFOS and PFOA.

2. Additionally, Guam brings this action pursuant to the Deceptive Trade Practices – Consumer Protection Act, 5 GCA §§ 32101–32807, as Defendants engaged in false, misleading, and deceptive acts and practices in advertising and selling AFFF to Guam. Guam purchased and used these AFFF products in performance of important public services, but was deceived by Defendants about the risks posed by AFFF, and was left by Defendants to deal with the consequences. Among other things, this action seeks full restitution for Guam related to these purchases.

3. The products at issue in this case, AFFF, are used to fight liquid fires. Defendants designed, manufactured, marketed, and sold AFFF throughout the United States, including in Guam. These AFFF products contained PFOS, PFOA, and/or their precursors (*i.e.*, substances that break down in the environment into

PFOS or PFOA). When used, the AFFF products released PFOS and PFOA into the environment. At all times relevant, Defendants controlled all, or substantially all, of the market in Guam for AFFF products.

4. PFOS and PFOA present a significant threat to Guam's environment and residents. They are mobile, persist indefinitely in the environment, bioaccumulate in individual organisms and humans, and biomagnify up the food chain. PFOS and PFOA are also associated with multiple and significant adverse health effects in humans. PFOS is associated with immune system suppression, including decreases in antibody responses to vaccines and increases in risk of childhood infections. PFOA is associated with, among other things, kidney cancer, testicular cancer, high cholesterol, thyroid disease, ulcerative colitis, and pregnancy-induced hypertension.

5. Since the creation of AFFF in the 1960s, Defendants have sold their AFFF products to military and industrial facilities, airports, firefighting training academies, and fire departments in Guam and elsewhere. These entities used Defendants' AFFF products as they were intended to be used and in a foreseeable manner, which introduced PFOS and PFOA into the environment and contaminated natural resources.

6. Defendants were aware of the toxic nature of PFOS and PFOA and the harmful and negative impact these substances have on the environment, wildlife, and human health. Nevertheless, they continued to manufacture, market, and sell their

AFFF products in Guam and elsewhere, and concealed the threat associated with use of their products.

7. Guam's natural resources have been injured as a result of Defendants' conduct. Hagåtña, Ordot, and Guam International Airport (which includes the former Naval Air Station Agana) have been identified as having AFFF-related contamination. Due to elevated levels of PFOS in groundwater, the Guam Waterworks Authority ("GWA") was forced to place two wells connected to the Hagåtña Groundwater Basin offline, which remain offline today. PFOS has also been found in at least four other wells near Guam International Airport; two of which also show elevated levels of PFOA.

8. As investigation continues, it is expected that further contamination from storage, handling, use, training with, testing equipment with, other discharges, and disposal of Defendants' AFFF products will be uncovered in Guam, especially given the U.S. military's historical and current presence on the Island.

9. Accordingly, Guam brings this action to require Defendants to pay all costs necessary to fully investigate locations in Guam where their AFFF products were stored, handled, used, trained with, tested equipment with, otherwise discharged, and disposed as well as all areas affected by their AFFF.

10. Guam also seeks to require Defendants to pay all costs necessary to remediate, assess, and restore the sites in Guam where there is AFFF-related contamination.

11. Guam also seeks from Defendants all damages that it is entitled to recover, including damages for injuries to all of Guam's natural resources, economic damages, restitution and disgorgement of Defendants' ill-gotten profits, punitive damages, and all other damages, fees, costs, and equitable relief to which it may be entitled.

12. Finally, as set forth in more detail below, Defendant E.I. du Pont de Nemours and Co. ("DuPont") has significant liabilities relating to PFOA and other PFAS, but has orchestrated efforts to prevent Guam and others from recovering on their claims. DuPont sought to avoid the massive liabilities associated with PFAS by creating Defendant The Chemours Company ("Chemours") and then "spinning off" its performance chemicals business and associated liabilities to Chemours, while leaving Chemours unable to satisfy those liabilities. Accordingly, Guam is also asserting claims for actual and constructive fraudulent transfer pursuant to 20 GCA §§ 6101 and 6103, and Del. Code Tit. 6 §§1301 to 1312.

#### THE PARTIES

13. Guam is represented by and through the Attorney General of Guam. Pursuant to 48 U.S.C. § 1421g(d)(1), the Attorney General is the chief legal officer of the Government of Guam. Guam is the trustee for the benefit of its citizens of all natural resources within its jurisdiction. The Attorney General, on behalf of Guam, is authorized to protect this public trust and to seek compensation for injury to the natural resources of Guam. 5 GCA § 30103 (charging the Attorney General with, *inter alia*, bringing actions "on behalf of the Territory representing the citizens as a whole for redress of grievances which the citizens individually cannot achieve."). In

addition, Guam may act in its parens patriae capacity to protect its “quasi-sovereign” interests, including its interest in the health and well-being of its residents and the integrity of its natural resources. Guam brings this case in its trustee and parens patriae capacities in order to address Island-wide contamination resulting from Defendants’ AFFF products.

14. Defendant The 3M Company (“3M”) is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business located at 3M Center, St. Paul, Minnesota 55144-1000. On information and belief, 3M has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

15. Defendant Tyco Fire Products LP (“Tyco”) is a limited partnership organized under the laws of the State of Delaware, with its principal place of business located at One Stanton Street, Marinette, Wisconsin 54143-2542. On information and belief, Tyco manufactures the Ansul brand of products and is the successor-in-interest to Ansul Company (collectively, “Tyco/Ansul”). On information and belief, Tyco/Ansul has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

16. Defendant Chemguard, Inc. (“Chemguard”) is a corporation organized under the laws of the State of Texas, with its principal place of business located at One Stanton Street, Marinette, Wisconsin 54143-2542. On information and belief,

Chemguard has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam. Further, on information and belief, Chemguard has supplied fluorosurfactants to manufacture AFFF products containing PFOS, PFOA, and/or their precursors, and such products were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

17. Defendant Buckeye Fire Equipment Company (“Buckeye”) is a corporation organized under the laws of the State of Ohio, with its principal place of business located at 110 Kings Road, Kings Mountain, North Carolina 28086. On information and belief, Buckeye has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

18. Defendant Kidde-Fenwal, Inc. (“Kidde-Fenwal”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at One Financial Plaza, Hartford, Connecticut 06101. On information and belief, Kidde-Fenwal is the successor-in-interest to Kidde Fire Fighting, Inc. (f/k/a Chubb National Foam, Inc. f/k/a National Foam System, Inc.) (collectively, “Kidde/Kidde Fire”). On information and belief, Kidde/Kidde Fire has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment

with, otherwise discharged, and/or disposed in Guam.

19. Defendant National Foam, Inc. (“National Foam”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 141 Junny Road, Angier, North Carolina 27501. On information and belief, National Foam manufactures the Angus brand of products and is the successor-in-interest to Angus Fire Armour Corporation (collectively, “National Foam/Angus Fire”). On information and belief, National Foam/Angus Fire has designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

20. Defendant E.I. du Pont de Nemours & Company (“DuPont”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 974 Centre Road, Wilmington, Delaware 19805. On information and belief, DuPont has supplied fluorosurfactants containing PFOS, PFOA, and/or their precursors to manufacture AFFF products, and such AFFF products were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

21. Defendant The Chemours Company (“Chemours”) is a limited liability company organized under the laws of the State of Delaware, with its principal place of business located at 1007 Market Street, P.O. Box 2047, Wilmington, Delaware, 19899. In 2015, DuPont spun off its performance chemicals business to Chemours, along with vast environmental liabilities which Chemours assumed, including those

related to PFAS and fluorosurfactants. Further, on information and belief, Chemours has supplied fluorosurfactants containing PFOS, PFOA, and/or their precursors to manufacture AFFF products, and such AFFF products were stored, handled, used, trained with, tested equipment with, otherwise discharged, and/or disposed in Guam.

22. Defendants represent all or substantially all of the market for AFFF products, and their key ingredients (fluorosurfactants), in Guam.

#### JURISDICTION AND VENUE

23. The Court has jurisdiction over this action pursuant to 7 GCA § 32201. The Court further has jurisdiction over this action as provided by the Deceptive Trade Practices – Consumer Protection Act, because it is based in part on Defendants' acts, omissions, and false, misleading, and deceptive practices pursuant to 5 GCA § 32128(d).

24. Venue is proper because the claims arise in Guam.

#### FACTUAL ALLEGATIONS

25. AFFF is a fire suppressing foam used to extinguish flammable liquid fires, including jet-fuel fires, aviation-related fires, hangar fires, ship fires, and chemical fires, and is used to train firefighters and test firefighting equipment.

26. AFFF contains PFAS, which are highly fluorinated synthetic chemical compounds that include carbon chains containing at least one carbon atom on which all hydrogen atoms are replaced by fluorine atoms. The PFAS family includes PFOS and PFOA.

27. 3M's AFFF products, created using an electrochemical fluorination process, contain PFOS and PFOA. The remaining Defendants' AFFF products,

created using a telomerization process, contain or break down into PFOA. Upon information and belief, AFFF manufactured by Defendants other than 3M is a fungible product and lacks traits that would make it possible to identify the product as being manufactured, distributed, or sold by a particular Defendant. Due to this fungibility, it may not be possible to identify the original manufacturer of the AFFF released at any particular site. Any inability of Guam to identify the original manufacturer of the specific AFFF products released into Guam's natural resources in particular instances at particular sites is a result of the fungibility of the products, and not as a result of any action or inaction by Guam.

28. When used as intended during a firefighting event or training exercise, AFFF can result in the release of PFOS or PFOA to enter the environment in a variety of ways, including, but not limited to, through surface water and groundwater.

29. Defendants advertised and sold AFFF to the United States government as well as to Guam and many other purchasers both for public and commercial use.

#### **PFOS and/or PFOA Released from Defendants' AFFF Products**

##### **Harm Guam's Environment and Wildlife**

30. PFOS and PFOA have characteristics that have resulted in persistent contamination of Guam's natural resources.

31. **PFOS and PFOA are Mobile.** Once introduced into the environment, PFOS and PFOA quickly spread because they easily dissolve in water and, thus, reach numerous water systems.

32. **PFOS and PFOA are Persistent.** PFOS and PFOA persist in the

environment indefinitely because their multiple fluorine-carbon bonds, which are exceptionally strong and stable, are resistant to metabolic and environmental degradation processes.

33. PFOS and PFOA Bioaccumulate and Biomagnify. Because PFOS and PFOA are very slowly excreted from individual organisms, ongoing low level exposure results in a build-up in body burden (*i.e.*, levels of PFOS and PFOA remaining within the body). They also biomagnify, meaning their concentration in organic tissue increases as they are consumed up the food chain.

34. PFOS and PFOA are toxic. They cause adverse impacts to the environment and animal and human health.

#### **PFOS and/or PFOA Released from Defendants' AFFF Products**

##### **Harm Guam's Residents**

35. PFOS and PFOA are associated with a variety of adverse health effects in humans.

36. PFOS exposure is associated with increases in serum lipids (*i.e.*, high cholesterol), decreases in antibody response to vaccines, increases in risk of childhood infections, and adverse reproductive and developmental effects, including pregnancy-induced hypertension and preeclampsia.

37. PFOA exposure is associated with increases in serum lipids and certain liver enzymes (indicating liver damage), decreases in antibody response to vaccines, pregnancy-induced hypertension and preeclampsia, decreased birthweight, and testicular and kidney cancer.

38. Fetuses and newborns are particularly sensitive to PFOS and PFOA's toxicity. Further, exposures to newborns are higher (compared to other subpopulations) through breastmilk or prepared formula when drinking water is contaminated with PFOS and/or PFOA.

**Defendants' History of Manufacturing and Selling AFFF**

39. 3M began to produce PFOS and PFOA by electrochemical fluorination in the 1940s. In the 1960s, 3M used its fluorination process to develop AFFF.

40. 3M manufactured, marketed, and sold AFFF from the 1960s to the early 2000s. National Foam and Tyco/Ansul began to manufacture, market, and sell AFFF in the 1970s. Angus Fire and Chemguard began to manufacture, market, and sell AFFF in the 1990s. Chemguard has also supplied fluorosurfactants to AFFF manufacturers. Buckeye began to manufacture, market, and sell AFFF in the 2000s. DuPont has supplied fluorosurfactants to AFFF manufacturers beginning in at least in 2002, and Chemours has supplied fluorosurfactants to AFFF manufactures following its spin-off from DuPont.

41. From the 1960s through 2001, the United States Department of Defense purchased AFFF exclusively from 3M and Tyco/Ansul.

42. In 2000, 3M announced it was phasing out its manufacture of PFOS, PFOA, and related products, including AFFF. 3M, in its press release announcing the phase out, stated "our products are safe," and that 3M's decision was "based on [its] principles of responsible environmental management." 3M further stated that "the presence of these materials at . . . very low levels does not pose a human health

or environmental risk.” In communications with EPA at that time, 3M also stated that it had “concluded that . . . other business opportunities were more deserving of the company’s energies and attention . . .”

43. After 3M exited the AFFF market, the remaining Defendants continued to manufacture and sell AFFF that contained PFOA and/or its precursors. More recently, Defendants remaining in the AFFF market have shifted their production to short-chain “C6” products.

44. Defendants knew their customers warehoused large stockpiles of AFFF. In fact, Defendants marketed their AFFF products by touting its shelf-life. Even after Defendants fully understood the toxicity of PFOS and PFOA—and their deleterious impacts when released directly into the environment through use and disposal of AFFF exactly as they had marketed it and intended that it be used—Defendants concealed the true nature of PFOS and PFOA. While Defendants phased out production or transitioned to other formulas, they did not properly inform their users about use of legacy AFFF that contained PFOS, PFOA, and/or their precursors. Defendants further did not act to get their harmful products off the market. Defendants did not warn public entities or others that, if they used AFFF with PFOS, PFOA, and/or their precursors, they would harm the environment, endanger human health, or incur substantial costs to investigate and clean up contamination of groundwater and other natural resources and to dispose of AFFF.

45. Accordingly, for many years after the original sale of AFFF that contained PFOS, PFOA, and/or their precursors, these AFFF products were still

being applied directly to the ground and washed into sediments, soils, and waters, harming the environment and endangering human health. Defendants never instructed their customers that they needed to properly dispose of their stockpiles of AFFF or how to properly dispose of AFFF.

**DEFENDANTS KNEW, OR AT THE VERY LEAST SHOULD HAVE  
KNOWN, THAT THEIR AFFF PRODUCTS CONTAINING PFOS, PFOA, AND/OR  
THEIR PRECURSORS WERE HARMFUL TO THE ENVIRONMENT AND  
HUMAN HEALTH**

A. 3M knew for decades that the PFOS and PFOA in its AFFF products were toxic and sought to suppress negative information regarding these chemicals.

46. 3M has known for decades that the PFAS, including PFOS and PFOA, contained in its AFFF products are toxic and negatively impact the environment and human health.

47. By 1956, 3M's PFAS were found to bind to proteins in human blood, resulting in bioaccumulation of those compounds in the human body.

48. 3M knew as early as 1960 that its PFAS waste could leach into groundwater and otherwise enter the environment. An internal memo from 1960 described 3M's understanding that such wastes "[would] eventually reach the water table and pollute domestic wells."

49. As early as 1963, 3M knew that its PFAS products were stable in the environment and did not degrade after disposal.

50. By the 1970s, 3M had become concerned about exposure to fluoroochemicals in the general population.

51. By no later than 1970, 3M was aware that its PFAS products were hazardous to marine life. One study of 3M's fluorochemicals around this time had to be abandoned to avoid severe pollution of nearby surface waters.

52. In 1975, 3M found there was a "universal presence" of PFOA in blood serum samples taken from across the United States. Since PFOA is not naturally occurring, this finding reasonably alerted 3M to the high likelihood that its products were a source of this PFOA—a possibility that 3M considered internally but did not share outside the company. This finding also alerted 3M to the likelihood that PFOA is mobile, persistent, bioaccumulative, and biomagnifying, as those characteristics would explain the presence of PFOA in human blood.

53. As early as 1976, 3M began monitoring the blood of its employees for PFAS because the company was concerned about PFAS's health effects.

54. In 1978, 3M conducted PFOS and PFOA studies in monkeys and rats. All monkeys died within the first few days or weeks after being given food contaminated with PFOS. The studies also showed that PFOS and PFOA affected the liver and gastrointestinal tract of the species tested.

55. In the late 1970s, 3M studied the fate and transport characteristics of PFOS in the environment, including in surface water and biota. A 1979 report drew a direct line between effluent from 3M's Decatur, Alabama plant and fluorochemicals bioaccumulating in fish tissue taken from the Tennessee River.

56. According to a 3M environmental specialist who resigned his position due to the company's inaction over PFOS's environmental impacts, 3M had resisted

calls from its own ecotoxicologists going back to 1979 to perform an ecological risk assessment on PFOS and similar chemicals. At the time of the specialist's resignation in 1999, 3M continued its resistance.

57. In 1983, 3M scientists opined that concerns about PFAS "give rise to legitimate questions about the persistence, accumulation potential, and ecotoxicity of fluorochemicals in the environment."

58. Also in 1984, 3M's internal analyses demonstrated that fluorochemicals were likely bioaccumulating in 3M's employees.

59. Despite its understanding of the hazards associated with the PFOS and PFOA in its products, 3M actively sought to suppress scientific research on the hazards associated with them, and it mounted a campaign to control the scientific dialogue on the fate, exposure, analytics, and effects to human health, and the ecological risks of PFOS and PFOA.

60. At least one scientist funded by 3M saw his goal as "keep[ing] 'bad' papers [regarding PFAS] out of the literature" because "in litigation situations" those articles "can be a large obstacle to refute."

61. 3M engaged in a variety of tactics to deceive others and to hide the negative effects of PFAS. For example, Dr. Rich Purdy, a former Environmental Specialist with 3M, wrote a letter detailing: (1) 3M's tactics to prevent research into the adverse effects of its PFOS; (2) 3M's submission of misinformation about its PFOS to the EPA; (3) 3M's failure to disclose substantial risks associated with its PFOS to the EPA; (4) 3M's failure to inform the public of the widespread dispersal of its PFOS

in the environment and population; (5) 3M's production of chemicals it knew posed an ecological risk and a danger to the food chain; and (6) 3M's attempts to keep its workers from discussing the problems with the company's fluorochemical projects to prevent their discussions from being used in the legal process.

62. Despite all of its knowledge, when 3M announced it would phase outs its PFOS, PFOA, and related products (including AFFF), it falsely asserted "our products are safe," instead of fully disclosing the substantial threat posed by PFOS and PFOA.

63. 3M knew, or at the very least should have known, that its AFFF products, in their intended use, would release PFOS and/or PFOA in such a way that would significantly threaten the environment and public health. Such knowledge was accessible to 3M, but not to Guam until 3M's acts and omissions came to light and Guam developed its own initial understanding of the toxicity of PFOS and PFOA.

**B. Tyco/Ansul, Chemguard, Buckeye, Kidde/Kidde Fire, National Foam/Angus Fire, and DuPont knew, or at the very least should have known, that PFOS and/or PFOA released from their AFFF products was dangerous to the environment and human health.**

64. Tyco/Ansul, Chemguard, Buckeye, Kidde/Kidde Fire, and National Foam/Angus Fire knew, or at the very least should have known, that in their intended and/or common use, their AFFF products containing or breaking down into PFOS and/or PFOA would harm the environment and human health.

65. Tyco/Ansul, Chemguard, Buckeye, Kidde/Kidde Fire, and National Foam/Angus Fire knew, or at the very least should have known that, their AFFF products released PFOS and PFOA that would dissolve in water, reach water system

in Guam, resist degradation, bioaccumulate and biomagnify, and harm animal and human health due to their toxicity.

66. DuPont, as a supplier of fluorosurfactants used in the AFFF products, was acutely aware of the harm PFOA could inflict on the environment, and the health risk it posed to communities surrounding sites where it was released.

67. Information regarding PFOS and PFOA was readily accessible to each of the above-referenced Defendants for decades (and, particularly, DuPont) because each is an expert in the field of AFFF manufacture and/or the materials needed to manufacture AFFF, and each has detailed information and understanding about the chemical compounds that form AFFF products, including fluorosurfactants and PFAS. Guam, by contrast, did not have access to such information, and, like many other public entities, is now only now beginning to understand the full consequences of the release of PFOS and/or PFOA into its natural resources.

i. **DuPont knew for decades that the PFOA is harmful to the environment and human health, but concealed its knowledge from AFFF users and regulators.**

68. DuPont scientists issued internal warnings about the toxicity associated with its PFOA products as early as 1961, including that PFOA caused adverse liver reactions in rats and dogs. DuPont's Toxicology Section Chief opined that such products should be "handled with extreme care," and that contact with the skin should be "strictly avoided."

69. In 1978, based on information it received from 3M about elevated and persistent fluoride levels in workers exposed to PFOA, DuPont initiated a plan to review and monitor the health conditions of potentially-exposed workers in order to

assess whether any negative health effects could be attributed to PFOA exposure. This monitoring plan involved obtaining blood samples from the workers and analyzing them for the presence of fluorine. As noted above, PFAS, including PFOS and PFOA, contain carbon and fluorine, and human exposure to these chemicals has been linked to elevated organic fluorine levels.

70. By 1979, DuPont had data indicating that workers exposed to PFOA had a significantly higher incidence of health issues than unexposed workers. DuPont did not report these data or the results of its worker health analyses to any government agency or community at that time.

71. The following year, DuPont internally confirmed that PFOA "is toxic," that humans accumulate PFOA in their tissue, and that "continued exposure is not tolerable."

72. Not only did DuPont know that PFOA accumulated in humans, but it was also aware that PFOA could cross the placenta from an exposed mother to her gestational child. DuPont conducted a blood sampling study of pregnant or recently pregnant employees. Of the eight women in the study who worked with fluoropolymers, two-or twenty-five percent-had children with birth defects in their eyes or face, and at least one had PFOA in the umbilical cord.

73. DuPont reported to EPA, in March 1982, the results from a rat study showing PFOA crossing the placenta when present in maternal blood, but DuPont concealed the results of the study of its own plant workers.

74. While DuPont knew about PFOA's toxicity danger as early as the 1960s, DuPont was also aware that PFAS was capable of contaminating the surrounding environment and causing human exposure. No later than 1984, DuPont was aware that PFOA is biopersistent.

75. DuPont held a meeting in 1984 to discuss the health and environmental issues related to PFOA. DuPont employees in attendance spoke of the PFOA issue as "one of corporate image, and corporate liability." They were resigned to DuPont's "incremental liability from this point on if we do nothing" because DuPont was "already liable for the past 32 years of operation." They also stated that the "legal and medical [departments within DuPont] will likely take the position of total elimination" of PFOA use in DuPont's business, and that these departments had "no incentive to take any other position."

76. DuPont's own Epidemiology Review Board ("ERB") repeatedly raised concerns about DuPont's statements to the public that there were no adverse health effects associated with human exposure to PFOA. For example, in February 2006, the ERB "strongly advise[d] against any public statements asserting that PFOA does not pose any risk to health" and questioned "the evidential basis of [DuPont's] public expression asserting, with what appears to be great confidence, that PFOA does not pose a risk to health."

77. Despite all of its knowledge regarding PFOA's toxicity, DuPont continued to claim that PFOA posed no health risks. For example, in 2008, DuPont literature is quoted in an article on AFFF appearing in Industrial Fire World

magazine, stating that DuPont “believes the weight of evidence indicates that PFOA exposure does not pose a health risk to the general public” because “there are no human health effects known to be caused by PFOA.”

**ii. DuPont worked in concert with other Defendants and the Firefighting Foam Coalition to Protect AFFF from Regulatory Scrutiny.**

78. The Firefighting Foam Coalition (“FFFC”), an AFFF trade group, was formed in 2001 to advocate for AFFF’s continued viability. All of the Defendants, with the exception of 3M, have been or are members of the FFFC (“FFFC Defendants”). Through their involvement in the FFFC, as well as a variety of other trade associations and groups, FFFC Defendants shared knowledge and information regarding PFOA and its precursors released from AFFF.

79. The FFFC Defendants worked together to protect AFFF from scrutiny, including by coordination their messaging on PFOA’s toxicological profile and their AFFF products’ contribution of PFOA into the environment. All of this was done to shield its members and the AFFF industry from the detrimental impact of the public and regulators learning the truth about the harms of PFOA and their products to the environment and human health.

80. FFFC Defendants regularly published newsletters bolstering their AFFF products. FFFC Defendants also regularly attended conferences. These coordinated efforts were meant to dispel concerns about the impact AFFF had on the environment and human health. They worked in concert to conceal known risks of their AFFF products and the PFOA and its precursors contained therein from the

government and public. Upon information and belief, they either had an express or tacit understanding to conceal such risks.

81. FFFC Defendants repeated the same message for years: Only one PFAS chemical, PFOS, had been taken off the market. Since the FFFC Defendants' products did not contain PFOS, they claimed their products were safe.

82. Among other things, FFFC Defendants persuaded the EPA that their AFFF products should be excluded from the EPA's enforceable consent agreement process related to PFOA and fluorinated telomer production by arguing that the products were not likely to be a source of PFOA in the environment.

83. FFFC Defendants knew, however, that their messaging regarding their AFFF products was false. Each of the FFFC Defendants knew that PFOA was released from the use of their AFFF products, and that PFOA presented a similar threat to the environment and public health as that posed by PFOS. While this was known to FFFC Defendants, it was not fully understood by the public and regulators, including Guam, until significant damage was already done.

**AFFF HAS RESULTED IN PFOS AND PFOA CONTAMINATION IN GUAM,  
INJURING NATURAL RESOURCES**

84. Guam's natural resources have been contaminated with PFOS and PFOA through the storage, handling, use, training with, testing equipment with, otherwise discharging, and/or disposal in Guam of AFFF, and investigation of the contamination is ongoing. Defendants' designing, manufacturing, marketing, and selling of AFFF throughout the United States, including in Guam, have been a

substantial factor in causing injuries to the natural resources of Guam due to PFOS and PFOA contamination. As investigation continues, additional sites are identified, and on- and off-site AFFF-related contamination is delineated, it is expected that significant contamination from use, handling, storage, training with, testing equipment with, otherwise discharging, and/or disposal of AFFF products will be uncovered.

85. Already, GWA has had to take action to combat AFFF-related contamination, through monitoring drinking water and protecting drinking water sources. GWA has taken wells near Hagåtña offline because of PFOS contamination, and is faced with elevated levels of PFOS and PFOA near Guam International Airport. PFOS and PFOA contamination related to AFFF poses a serious threat to Guam's groundwater supplies, which supply 80% of the drinking water to a population of 150,000 residents and nearly 1,000,000 visitors per year.

86. Investigation is necessary to ascertain the scope of AFFF-related contamination and to return the natural resources impacted to levels that are safe for human health and the environment as well as to the condition they were in prior to the impact of these contaminants. Defendants are liable for the cost of such investigation and restoration.

#### **DUPONT'S FRAUDULENT SPINOFF OF ITS PERFORMANCE CHEMICALS BUSINESS**

87. DuPont has substantial liabilities related to PFOA and other PFAS, which arise from its use and release of these chemicals at several of its plants around

the country, as well as its manufacture and/or sale of products that contain PFAS, such as fluorosurfactants. However, DuPont has sought to insulate itself from billions of dollars in these liabilities.

88. For decades, DuPont used and/or manufactured PFOA and other PFAS at chemical plants in West Virginia, New Jersey and North Carolina. DuPont was sued multiple times by landowners and neighbors of those plants for liabilities arising out of PFAS. DuPont expended hundreds of millions of dollars litigating and settling those lawsuits. DuPont thus knew, or reasonably should have known, that it faced billions of dollars in liabilities related to PFAS.

89. DuPont sought to limit its liability related to PFAS by engaging in a series of restructuring transactions, starting with the “spinoff” of its performance chemicals business (which included PFAS related operations) into Chemours, and continuing through the merger with The Dow Chemical Company, creating DowDuPont Inc., the transfer of DuPont’s historic assets away from DuPont, the transfer of such assets to other DowDuPont Inc. entities, and, ultimately, the spin-off of DuPont to a new parent company named Corteva, Inc. On information and belief, DuPont was reorganized – and its assets were reshuffled – in order to shield tens of billions of dollars in assets from the PFAS liabilities DuPont tried to quarantine in Chemours.

90. DuPont incorporated Chemours on or about February 18, 2014, originally under the name “Performance Operations, LLC.” Prior to July 1, 2015, Chemours was a wholly-owned subsidiary of DuPont.

91. On July 1, 2015, DuPont completed the spinoff of its performance chemicals business (the “Spinoff”) and Chemours became a separate, publicly-traded entity.

92. To effectuate the Spinoff, DuPont and Chemours entered into a Separation Agreement (the “Separation Agreement”).

93. Upon information and belief, DuPont completed a significant internal reorganization prior to the Spinoff, so that all the assets and liabilities (held by DuPont and/or its subsidiaries) that DuPont deemed to be part of the performance chemicals business would be held by Chemours – including those related to PFAS.

94. In addition to the assets transferred to Chemours, DuPont caused Chemours to assume DuPont’s historical liabilities arising from DuPont’s discharge of PFOA into the environment. While specific details about the liabilities are set forth in non-public schedules that are not available to Guam at this time, the Separation Agreement required Chemours to assume what the agreement defines as “Chemours Liabilities,” which include DuPont’s historic liabilities regardless of: (i) when or where such liabilities arose; (ii) whether the facts upon which they are based occurred prior to, on or subsequent to the effective date of the Spinoff; (iii) where or against whom such liabilities are asserted or determined; (iv) whether arising from or alleged to arise from negligence, gross negligence, recklessness, violation of law, fraud, misrepresentation by DuPont and/or Chemours; and (v) which entity is named in any action associated with any liability.

95. The Separation Agreement defines Chemours Liabilities broadly, to include “any and all Liabilities relating . . . primarily to, arising primarily out of or resulting primarily from, the operation or conduct of the Chemours Business, as conducted at any time prior to, at or after the Effective Date . . . including . . . any and all Chemours Assumed Environmental Liabilities. . . .,” which include DuPont’s historic liabilities relating to and arising from its decades of emitting PFOA into the environment and selling PFAS.

96. Chemours also agreed to indemnify DuPont in connection with those liabilities that it assumed. The indemnification has no cap or temporal limitation.

97. Chemours also agreed to use its best efforts to be fully substituted for DuPont with respect to “any order, decree, judgment, agreement or Action with respect to Chemours Assumed Environmental Liabilities . . .”

98. Upon information and belief, there was no meaningful, arms-length negotiation of the Separation Agreement. Indeed, when the Separation Agreement was signed, Chemours was a wholly-owned subsidiary of DuPont, and a majority of the Chemours board consisted of DuPont employees.

99. In connection with the Spinoff, Chemours paid DuPont approximately \$3.9 billion, consisting of approximately \$3.4 billion in cash, plus approximately \$507 million in promissory notes. Chemours also transferred all of its stock to DuPont, which was ultimately delivered to DuPont’s shareholders. In order to fund the \$3.9 billion payment, Chemours issued unsecured senior notes and entered into a credit

agreement with a syndicate of banks to provide two senior secured credit facilities, incurring a total of \$4 billion in indebtedness.

100. Chemours was thinly capitalized following the Spinoff. Shortly after the Spinoff, market analysts described Chemours as “a bankruptcy waiting to happen” and a company “purposely designed for bankruptcy.”

101. According to Chemours’ unaudited pro forma financial statements, as of March 31, 2015 (but giving effect to all of the transactions contemplated in the Spinoff), Chemours had total assets of \$6.4 billion and total liabilities of \$6.3 billion. Following the Spinoff, Chemours issued a 10-K stating that, as of December 31, 2015, Chemours had assets totaling \$6.3 billion and total liabilities of \$6.2 billion.

102. The 10-K stated that these liabilities include \$454 million in “other accrued liabilities,” which included \$11 million for accrued litigation and \$68 million for environmental remediation. The 10-K also stated Chemours had \$553 million in “other liabilities,” which included \$223 million for environmental remediation and \$58 million for accrued litigation.

103. However, Chemours significantly understated its liabilities, especially the liabilities that it had assumed from DuPont related to PFAS, which DuPont and Chemours knew or should have known would amount to billions of dollars in addition to other environmental liabilities related to DuPont and Chemours facilities. Had Chemours taken the full extent of these liabilities into account, as it should have done, it would have negative equity (that is, liabilities that are greater than assets), and would be balance-sheet insolvent.

**FIRST COUNT**  
**Strict Products Liability—Design Defect**

104. Guam incorporates by reference all allegations contained in the previous paragraphs.

105. Defendants designed, manufactured, marketed, and sold AFFF products containing PFOS, PFOA, and/or their precursors that were stored, handled, used, trained with, tested equipment with, otherwise discharged, and disposed of in Guam during the relevant period.

106. As designers, manufacturers, marketers, and sellers of AFFF, Defendants had a duty to make and sell products that are reasonably fit, suitable, and safe for their intended or reasonably foreseeable uses. Defendants owed that duty both to reasonably foreseeable users of their products and also to any person or property that might reasonably be expected to come into contact with those products.

107. Defendants' AFFF products containing PFOS, PFOA, and/or their precursors were used in a reasonably foreseeable manner and without substantial change in the condition of such products. These products were defective and unfit for their reasonable use. Defendants' AFFF products foreseeably contaminated groundwater and other natural resources at and around the sites where they were used. Defendants knew or reasonably should have known that their manufacture, marketing, and/or sale, as well as their customers' storage, handling, use, training with, testing equipment with, other discharge, and disposal of AFFF in an intended or reasonably foreseeable manner, would result in the release of PFOS and PFOA in the environment, including in Guam.

108. AFFF products containing PFOS, PFOA, and/or their precursors in Guam have injured and are continuing to injure groundwater and other natural resources. Defendants' AFFF products were defective in design and unreasonably dangerous because, among other things:

- 1) Defendants' AFFF products cause persistent PFOS and PFOA contamination when used in a reasonably foreseeable and intended manner;
- 2) PFOS and PFOA released into the environment from Defendants' AFFF products cause contamination in groundwater and surface water that are the sources of drinking water and pose significant threats to public health and welfare; and
- 3) Defendants failed to disclose reasonable, appropriate, and/or adequate scientific studies to evaluate the environmental fate and transport and potential ecological and human health effects of PFOS and PFOA.

109. At all times relevant to this action, the AFFF products that Defendants designed, manufactured, marketed, and sold were dangerous to an extent beyond that which would be contemplated by the ordinary consumer.

110. At all times relevant to this action, the foreseeable risk to the environment and public health and welfare posed by Defendants' AFFF products containing PFOS, PFOA, and/or their precursors outweighed the cost to Defendants of reducing or eliminating such risk.

111. At all times relevant to this action, Defendants knew or should have known about reasonably safer and feasible alternatives to their AFFF products, and the omission of such alternative designs rendered their AFFF products not reasonably safe. While Defendants have recently transitioned to short-chain PFAS-based AFFF products, which they claim are safer, they could have made this transition earlier. Moreover, AFFF can be designed with fluorine-free compounds, which do not contain or break down into PFAS.

112. As a direct and proximate result of the defects in Defendants' design, manufacture, marketing, and sale of AFFF products containing PFOS, PFOA, and/or their precursors, groundwater and other natural resources in Guam have become contaminated with PFOS and/or PFOA, causing Guam and its citizens significant injury and damage.

113. As a direct and proximate result of Defendants' acts and omissions, as alleged herein, Guam is incurring, and will continue to incur, damages in an amount to be proved at trial related to PFOS and PFOA contamination of groundwater and other natural resources resulting from Defendants' AFFF products.

114. As a further direct and proximate result of Defendants' acts and omissions alleged in this Complaint, Guam has incurred, and will continue to incur, investigation, cleanup and removal, restoration, treatment, monitoring, and other costs and expenses related to contamination of the groundwater and other natural resources resulting from Defendants' AFFF products, for which Defendants are strictly, jointly, and severally liable.

115. Defendants knew it was substantially certain that their acts and omissions described above would cause the contamination and harms described herein.

116. As long as Guam's natural resources remain contaminated with PFOS and/or PFOA due to Defendants' conduct, these harms continue.

117. Defendants are strictly liable for all such damages, and Guam is entitled to recover all such damages and other relief as set forth below.

**SECOND COUNT**  
**Strict Products Liability—Failure to Warn**

118. Guam incorporates by reference all allegations contained in the previous paragraphs.

119. As designers, manufacturers, marketers, and sellers of AFFF products containing PFOS, PFOA, and/or their precursors, Defendants had a strict duty to Guam and to those who were at risk of being harmed by AFFF to warn users of those products and Guam of the foreseeable harms associated with them.

120. Defendants had a duty to warn Guam about the dangers of their AFFF products because, among other things, Guam is the trustee, for the benefit of its citizens, of all natural resources within its jurisdiction and because Guam maintains a "quasi-sovereign" interest in the well-being of its residents.

121. Defendants inadequately warned of the likelihood that PFOS and/or PFOA would be released into the environment during the normal use of their AFFF products, and of the widespread, toxic, and persistent effects of such releases. Defendants failed to provide such warnings to (i) users and buyers of their AFFF

products containing PFOS, PFOA, and/or their precursors, (ii) Guam, and (iii) others to which it was reasonably foreseeable Defendants' AFFF products would cause harm. To the extent Defendants provided any warnings about their products, they were not warnings that a reasonably prudent person in the same or similar circumstances would have provided with respect to the danger posed by AFFF containing PFOS, PFOA, and/or their precursors, and the warnings did not convey adequate information on the dangers of AFFF containing these chemicals to the mind of a reasonably foreseeable or ordinary user or bystander.

122. Despite the fact that Defendants knew or should have known about the risks of AFFF containing PFOS, PFOA, and/or their precursors, Defendants withheld such knowledge from Guam, regulators, and the public. Moreover, Defendants affirmatively distorted and/or suppressed their knowledge and the scientific evidence linking their products to the unreasonable dangers they pose.

123. At no time relevant to this action did Defendants warn users and buyers of their AFFF products, Guam, and others who it was reasonably foreseeable would be harmed by AFFF, that Defendants' AFFF products would release PFOS and/or PFOA into the environment during the products' normal use, and of the widespread, toxic, and persistent effects of such releases.

124. Defendants' AFFF products were in the same condition when they were purchased and/or used as they were when they left Defendants' control. Defendants' customers used the AFFF products in a reasonably foreseeable manner and without any substantial change in the condition of the products.

125. Had Defendants provided adequate warnings about the hazards associated with their AFFF products containing PFOA, PFOS, and/or their precursors, users and buyers, Guam, and others who it was reasonably foreseeable would be harmed by the AFFF products would have heeded those warnings.

126. As a direct and proximate result of Defendants' failure to warn of the hazards of AFFF containing PFOS, PFOA, and/or their precursors, groundwater and other natural resources in Guam have become contaminated with PFOS and PFOA.

127. As a direct and proximate result of Defendants' acts and omissions, Guam has incurred, is incurring, and will continue to incur in the future damages related to PFOS and PFOA contamination in an amount to be proved at trial.

128. Defendants knew it was substantially certain that their acts and omissions described above would cause the Guam's injury and damage.

129. As long as Guam's natural resources remain contaminated with PFOS and/or PFOA due to Defendants' conduct, this injury and damage continues.

130. Defendants are strictly liable for all such damages, and Guam is entitled to recover all such damages and other relief as set forth below.

**THIRD COUNT**

Negligence

131. Guam incorporates by reference all allegations contained in the previous paragraphs.

132. Defendants had a duty to Guam to ensure that PFOS and/or PFOA were not released as a result of the storage, handling, use, training with, testing equipment

with, other discharge, and disposal of AFFF, and did not injure groundwater and other natural resources in Guam.

133. Defendants had a duty to Guam to exercise due care in the design, manufacture, marketing, sale, testing, labeling, and instructions for use of their AFFF products containing PFOS, PFOA, and/or their precursors.

134. Defendants breached these duties.

135. As a direct and proximate result of Defendants' negligence in designing AFFF and in failing to warn AFFF purchasers, Guam, and others who it was reasonably foreseeable would be harmed by the dangers of Defendants' AFFF products, groundwater and other natural resources in Guam, have become contaminated with PFOS and PFOA.

136. As a further direct and proximate result of the contamination of the environment from Defendant's AFFF containing PFOA, PFOS, and/or their precursors, Guam has incurred, is incurring, and will continue to incur investigation, clean up and removal, treatment, monitoring and restoration costs, and expenses for which Defendants are jointly and severally liable.

137. As long as Guam's natural resources remain contaminated with PFOS and/or PFOA due to Defendants' conduct, the harm to Guam continues.

**FOURTH COUNT**  
**Public Nuisance**

138. Guam incorporates by reference all allegations contained in the previous paragraphs.

139. Groundwater and other natural resources of Guam are held in trust by Guam. Pursuant to 5 GCA § 30110, the Attorney General has the authority to bring civil actions to abate public nuisances in Guam.

140. The contamination of groundwater and other natural resources in Guam as a result of the use of Defendants' AFFF products is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, and is a nuisance pursuant to 20 GCA § 10101.

141. The free use and enjoyment of uncontaminated natural resources of Guam is a right common to the people of Guam, and as such Defendants' conduct constitutes a public nuisance pursuant to 20 GCA § 10102.

142. Defendants' conduct has further interfered with Guam's obligation to protect the natural resources of Guam, which are held by Guam in trust for the benefit of people of Guam.

143. As long as Guam's natural resources remain contaminated with PFOS and/or PFOA due to Defendants' conduct, this public nuisance continues.

144. Until these natural resources are restored, Defendants are liable for the creation, and continued maintenance, of a public nuisance in contravention of the people's common right to clean natural resources in Guam.

145. Defendants knowingly created this public nuisance. Defendants marketed AFFF their customers, including Guam, knowing that use of their AFFF—exactly as marketed for intended use—would release PFOS or PFOA into the

environment. Further, well after Defendants understood the mobile, persistent, bioaccumulative, and toxic nature of PFOS and PFOA in the environment, Defendants never instructed their customers, including Guam, to stop using the AFFF in their possession or that they needed to specially dispose of AFFF so as to not further contaminate the natural resources of Guam.

### FIFTH COUNT

#### Violations of the Deceptive Trade Practices – Consumer Protection Act

146. Guam incorporates by reference all allegations contained in the previous paragraphs.

147. Guam alleges violations by Defendants of 5 GCA § 32201(a) and (b).

148. Defendants, as alleged and detailed above have, in the conduct of trade or commerce, engaged in false, misleading, or deceptive acts or practices in violation of 5 GCA § 32201(a) and (b) including but not limited to:

- a. Falsely representing that AFFF products did not preset a threat to the environment or human health;
- b. Misrepresenting that AFFF did not contribute unsafe levels of PFOS and/or PFOA in the environment;
- c. Despite knowing the dangers associated with PFOS and PFOA contamination, withholding this knowledge from Guam, such that it did not understand the full consequences of its use of AFFF at the time of purchase and continuing after its use; and

d. Selling AFFF to Guam, despite knowing that use of the AFFF would result in PFOS and/or PFOA contamination, and burden Guam with costs, including but not limited to investigation, clean up, and disposal of remaining stockpiles.

149. Defendants, through their actions in: (1) making false representations and misrepresentations regarding the risks of PFOS and/or PFOA contamination related to use of AFFF, and (2) making such false representations and misrepresentations despite their knowledge of the dangers associated with PFOS and/or PFOA, violated 5 GCA § 32201(a) and (b) by:

- a. Engaging in false, misleading, or deceptive acts or practices in violation of 5 GCA § 32201(a).
- b. Representing that goods or services have sponsorship, approval, characteristics, ingredients, uses, benefits, or quantities which they do not have, or that a person has sponsorship, approval, status, affiliation, or connection which he or she does not have, in violation of 5 GCA § 32201(b)(5)
- c. Representing that goods or services are of a particular standard, quality, or grade, or that goods of a particular style or model, if they are another, in violation of 5 GCA § 32201(c)(1)
- d. Failing to disclose information concerning goods or services which was known at the time of the transaction, if such failure to disclose such information was intended to induce the consumer into a transaction

which the consumer would not have entered had the information been disclosed, in violation of 5 GCA § 32201(c)(17).

- e. Causing confusion or misunderstanding as to affiliation, connection, or association with, or certification by, another, in violation of 5 GCA § 32201(b)(3).

**SIXTH COUNT**  
**Actual Fraudulent Transfer (DuPont and Chemours)**

150. Guam incorporates by reference all allegations contained in the previous paragraphs.

151. Through their effectuation of the Spinoff, Chemours and DuPont (the “Fraudulent Transfer Defendants”) caused Chemours to transfer valuable assets to DuPont, including but not limited to the \$3.9 billion dividend (the “Transfers”), while simultaneously assuming significant liabilities (the “Assumed Liabilities”).

152. The Transfers and Assumed Liabilities were made for the benefit of DuPont.

153. At the time that the Transfers were made and the Liabilities were assumed, and until the Spinoff was complete, DuPont was in a position to, and in fact did, control and dominate Chemours.

154. The Fraudulent Transfer Defendants made the Transfers and incurred the Assumed Liabilities with the actual intent to hinder, delay and defraud the creditors or future creditors of Chemours.

155. Guam has been harmed as a result of the conduct of the Fraudulent Transfer Defendants.

156. Under 20 GCA §§ 6101 and 6103 and Del. Code. Tit. 6 Sec. 1301 to 1312, Guam is entitled to avoid the Transfers and to recover property or value transferred to DuPont.

**SEVENTH COUNT**  
**Constructive Fraudulent Transfer (DuPont and Chemours)**

157. Guam incorporates by reference all allegations contained in the previous paragraphs.

158. Chemours did not receive reasonably equivalent value from DuPont in exchange for the Transfers and Assumed Liabilities.

159. Each of the Transfers and Chemours' assumption of the Assumed Liabilities was made to or for the benefit of DuPont.

160. At the time that the Transfers were made and the Assumed Liabilities were assumed, and until the Spinoff was complete, DuPont was in a position to, and in fact did, control and dominate Chemours.

161. The Fraudulent Transfer Defendants made the Transfers and assumed the Assumed Liabilities when Chemours was engaged or about to be engaged in a business for which its remaining assets were unreasonably small in relation to its business.

162. Chemours was insolvent or in contemplation of insolvency at the time of the Transfers, or became insolvent as a result of the Transfers and its assumption of the Assumed Liabilities.

163. At the time that the Transfers were made and Chemours assumed the Assumed Liabilities, the Fraudulent Transfer Defendants intended to incur, or

believed or reasonably should have believed, that Chemours would incur debts beyond its ability to pay as they became due.

164. Guam has been harmed as a result of the Transfers.

165. Under to 20 GCA §§ 6101 and 6103 and Del. Code. Tit. 6 Sec. 1301 to 1312, Guam is entitled to avoid the Transfers and to recover property or value transferred to DuPont.

**PRAYER FOR RELIEF**

WHEREFORE, Guam prays that the Court award judgment in its favor as follows:

1. Finding Defendants liable for all costs to investigate, clean up and remove, restore, treat, monitor, and otherwise respond to PFOS and PFOA contamination resulting from Defendants' AFFF, so the contaminated natural resources are restored to their original condition, and for all damages to compensate the residents of Guam for the lost use and value of these natural resources during all times of injury caused by PFOS and PFOA, and for such orders as may be necessary to provide full relief to address the threat of contamination to Guam, including the costs of:

a. Past and future testing of natural resources at and around sites in Guam where Defendants' AFFF was stored, handled, used, trained with, tested equipment with, otherwise discharged, and disposed of in the Territory, and thus likely caused PFOS and/or PFOA contamination;

- b. Past and future treatment of all natural resources at and around sites in Guam where Defendants' AFFF was stored, handled, used, trained with, tested equipment with, otherwise discharged, and disposal of and which contain detectable levels of PFOS and/or PFOA until restored to non-detectable levels; and
  - c. Past and future monitoring of Guam's natural resources at and around sites in Guam where Defendants' AFFF was stored, handled, used, trained with, tested equipment with, otherwise discharged, and as long as there is a detectable presence of PFOS and/or PFOA, and restoration of such natural resources to their pre-discharge condition;
2. Ordering Defendants to pay for all costs related to the investigation, cleanup, restoration, treatment, and monitoring of PFOS and/or PFOA contamination of Guam's natural resources resulting from Defendants' AFFF.
3. Ordering Defendants to pay for all damages in an amount at least equal to the full cost of restoring Guam's natural resources to their original condition prior to the PFOS and/or PFOA contamination resulting from Defendants' AFFF;
4. Ordering Defendants to pay for all compensatory damages for economic damages and for the lost value (including lost use) of Guam's natural resources as a result of the PFOS and/or PFOA contamination resulting from Defendants' AFFF.
5. Ordering Defendants to pay for all other damages sustained by Guam in its public trustee and parens patriae capacities as a direct and proximate result of Defendants' acts and omissions alleged herein.

6. Ordering Defendants to reimburse Guam for its costs of abatement, without regard to fault, including but not limited to all costs to investigate, clean up, restore, treat, monitor, and otherwise respond to contamination of Guam's natural resources resulting from Defendants' AFFF products so that such natural resources are restored to their original condition.

7. Compelling Defendants to abate the nuisance by investigating, cleaning up, restoring, treating, monitoring, and otherwise responding to contamination of Guam's natural resources resulting from Defendants' AFFF products so that such natural resources are restored to their original condition.

8. Ordering Defendants to pay civil penalties to the Consumer Protection Fund for each violation of 5 GCA § 32201(a) and (b) up to a total of \$5,000 per each violation.

9. Ordering Defendants to pay restitution to Guam.

10. Ordering Defendants to disgorge all ill-gotten gains.

11. Ordering the Transfers void to the extent necessary to satisfy Guam's claims.

12. Ordering Defendants to pay exemplary or punitive damages as the trier of fact deems just and proper.

13. Ordering Defendants to pay punitive damages pursuant to 20 GCA § 2120.

14. Ordering Defendants to pay Guam's attorneys' fees and costs of court.

15. Granting Guam all other relief to which it is entitled.

**JURY DEMAND**

Guam hereby request a jury trial on all issues raised in this Complaint to the extent permitted by law.

Respectfully submitted this 5<sup>th</sup> day of September, 2019.

OFFICE OF THE ATTORNEY GENERAL  
**Leevin Taitano Camacho**, Attorney General

By:

**KENNETH ORCUTT**  
Deputy Attorney General

By:

**JOSEPH A. PEREZ**  
Assistant Attorney General

By:

**JANICE CAMACHO**  
Assistant Attorney General

# EXHIBIT B



**FILED**  
SUPERIOR COURT  
OF GUAM

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By: 

Office of the Attorney General  
**Leevin Taitano Camacho**  
 Attorney General of Guam  
**Litigation Division**  
 590 S. Marine Corps Drive  
 Suite 802, ITC Building  
 Tamuning, Guam 96913 • USA  
 (671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

**Attorneys for the Government of Guam**

**IN THE SUPERIOR COURT OF GUAM  
 HAGATNA, GUAM**

GOVERNMENT OF GUAM,	)	CIVIL CASE NO. CV <u>CV 1080-19</u>
	)	
Plaintiff,	)	
	)	
vs.	)	
	)	
THE 3M COMPANY; TYCO FIRE	)	
PRODUCTS LP; CHEMGUARD, INC.;	)	SUMMONS
BUCKEYE FIRE EQUIPMENT	)	
COMPANY; KIDDE-FENWAL, INC.;	)	
NATIONAL FOAM, INC.; E.I. DU PONT	)	
DE NEMOURS AND CO.; and THE	)	
CHEMOURS COMPANY,	)	
	)	
Defendants.)		

**TO: E.I. DU PONT DE NEMOURS AND CO**  
 C/O THE CORPORATION TRUST COMPANY, as Registered Agent  
 CORPORATION TRUST CENTER  
 1209 ORANGE ST.  
 WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:**

**OFFICE OF THE ATTORNEY GENERAL OF GUAM  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913**

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

  
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
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2019 SEP -5 PM 3:57

CLERK OF COURT

By: JR

Office of the Attorney General  
Leevin Taitano Camacho  
Attorney General of Guam  
**Litigation Division**  
590 S. Marine Corps Drive  
Suite 802, ITC Building  
Tamuning, Guam 96913 • USA  
(671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

Attorneys for the Government of Guam

**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM, ) CIVIL CASE NO. CV CV 1080-19  
vs. )  
Plaintiff, )  
vs. )  
THE 3M COMPANY; TYCO FIRE )  
PRODUCTS LP; CHEMGUARD, INC.; )  
BUCKEYE FIRE EQUIPMENT )  
COMPANY; KIDDE-FENWAL, INC.; )  
NATIONAL FOAM, INC.; E.I. DU PONT )  
DE NEMOURS AND CO.; and THE )  
CHEMOIIRS COMPANY, )  
Defendants. )

**SUMMONS**

**TO:** **TYCO FIRE PRODUCTS LP**  
C/O THE CORPORATION TRUST COMPANY, as Registered Agent  
CORPORATION TRUST CENTER  
1209 ORANGE ST.  
WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

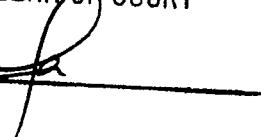
  
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:54

CLERK OF COURT

By: 

Office of the Attorney General  
Leevin Taitano Camacho  
Attorney General of Guam  
Litigation Division  
590 S. Marine Corps Drive  
Suite 802, ITC Building  
Tamuning, Guam 96913 • USA  
(671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

Attorneys for the Government of Guam

IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM

GOVERNMENT OF GUAM,

) CIVIL CASE NO. CV CV 1080-19

Plaintiff,

)

vs.

)

THE 3M COMPANY; TYCO FIRE  
PRODUCTS LP; CHEMGUARD, INC.;  
BUCKEYE FIRE EQUIPMENT  
COMPANY; KIDDE-FENWAL, INC.;  
NATIONAL FOAM, INC.; E.I. DU PONT  
DE NEMOURS AND CO.; and THE  
CHEMOOURS COMPANY,

SUMMONS

Defendants.)

TO: **THE CHEMOOURS COMPANY**

C/O THE CORPORATION TRUST COMPANY, as Registered Agent  
CORPORATION TRUST CENTER  
1209 ORANGE ST.  
WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

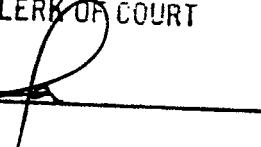
  
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:48

CLERK OF COURT

By 

**Office of the Attorney General**  
**Leevin Taitano Camacho**  
 Attorney General of Guam  
**Litigation Division**  
 590 S. Marine Corps Drive  
 Suite 802, ITC Building  
 Tamuning, Guam 96913 • USA  
 (671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

**Attorneys for the Government of Guam**

**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM,	)	CIVIL CASE NO. CV <u>CV 1080-19</u>
	)	
Plaintiff,	)	
	)	
vs.	)	
	)	
THE 3M COMPANY; TYCO FIRE	)	
PRODUCTS LP; CHEMGUARD, INC.;	)	SUMMONS
BUCKEYE FIRE EQUIPMENT	)	
COMPANY; KIDDE-FENWAL, INC.;	)	
NATIONAL FOAM, INC.; E.I. DU PONT	)	
DE NEMOURS AND CO.; and THE	)	
CHEMOURS COMPANY,	)	
	)	
Defendants.)		

---

**TO: BUCKEYE FIRE EQUIPMENT COMPANY**  
 C/O Christopher M. Whelchel, as Registered Agent  
 516 South New Hope Road  
 Gastonia, NC 28054

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

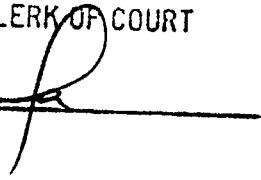
  
AMY COLLEEN R. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:42

CLERK OF COURT

By: 

**Office of the Attorney General**  
**Leevin Taitano Camacho**  
 Attorney General of Guam  
**Litigation Division**  
 590 S. Marine Corps Drive  
 Suite 802, ITC Building  
 Tamuning, Guam 96913 • USA  
 (671) 475-3324 • (671) 472-2493 (Fax)  
[www.guamag.org](http://www.guamag.org)

Attorneys for the Government of Guam

**IN THE SUPERIOR COURT OF GUAM  
 HAGATNA, GUAM**

GOVERNMENT OF GUAM,	) CIVIL CASE NO. CV <u>CV 1080-19</u>
	)
Plaintiff,	)
	)
vs.	)
	)
THE 3M COMPANY; TYCO FIRE	)
PRODUCTS LP; CHEMGUARD, INC.;	)
BUCKEYE FIRE EQUIPMENT	)
COMPANY; KIDDE-FENWAL, INC.;	)
NATIONAL FOAM, INC.; E.I. DU PONT	)
DE NEMOURS AND CO.; and THE	)
CHEMOEURS COMPANY,	)
	)
Defendants.)	

**SUMMONS**

**TO: CHEMGUARD, INC.**  
 C/O CT CORPORATION, as Registered Agent  
 1999 Bryan Street  
 Dallas, Texas 75201

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:   
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



**FILED**  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:38

~~CLERK OF COURT~~

By:

**Office of the Attorney General  
Leevin Taitano Camacho  
Attorney General of Guam  
Litigation Division  
590 S. Marine Corps Drive  
Suite 802, ITC Building  
Tamuning, Guam 96913 • USA  
(671) 475-3324 • (671) 472-2493  
[www.guamag.org](http://www.guamag.org)**

## **Attorneys for the Government of Guam**

**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM, ) CIVIL CASE NO. CV C1 1080-19  
Plaintiff, )  
vs. )  
THE 3M COMPANY; TYCO FIRE )  
PRODUCTS LP; CHEMGUARD, INC.; )  
BUCKEYE FIRE EQUIPMENT )  
COMPANY; KIDDE-FENWAL, INC.; )  
NATIONAL FOAM, INC.; E.I. DU PONT )  
DE NEMOURS AND CO.; and THE )  
CHEMOOURS COMPANY, )  
Defendants. )  
SUMMONS

**TO: NATIONAL FOAM, INC.**  
C/O THE CORPORATION TRUST COMPANY, as Registered Agent  
CORPORATION TRUST CENTER  
1209 ORANGE ST.  
WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:**

**OFFICE OF THE ATTORNEY GENERAL OF GUAM  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913**

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:

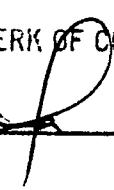
  
AMY COLLEEN K. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam



FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP -5 PM 3:33

CLERK OF COURT

By: 

**Office of the Attorney General**

**Leevin Taitano Camacho**

Attorney General of Guam

**Litigation Division**

590 S. Marine Corps Drive

Suite 802, ITC Building

Tamuning, Guam 96913 • USA

(671) 475-3324 • (671) 472-2493 (Fax)

[www.guamag.org](http://www.guamag.org)

**Attorneys for the Government of Guam**

**IN THE SUPERIOR COURT OF GUAM  
HAGATNA, GUAM**

GOVERNMENT OF GUAM,

) CIVIL CASE NO. CV-CV 1080-19

Plaintiff,

)

vs.

)

THE 3M COMPANY; TYCO FIRE  
PRODUCTS LP; CHEMGUARD, INC.;  
BUCKEYE FIRE EQUIPMENT  
COMPANY; KIDDE-FENWAL, INC.;  
NATIONAL FOAM, INC.; E.I. DU PONT  
DE NEMOURS AND CO.; and THE  
CHEMOURS COMPANY,

**SUMMONS**

)

Defendants.)

**TO: KIDDE-FENWAL, INC.**

C/O THE CORPORATION TRUST COMPANY, as Registered Agent

CORPORATION TRUST CENTER

1209 ORANGE ST.

WILMINGTON, DE 19801

**YOU ARE HEREBY SUMMONED AND REQUIRED TO SERVE** upon the Attorney General of Guam, Attorney for Plaintiff, whose address is:

**OFFICE OF THE ATTORNEY GENERAL OF GUAM**  
590 S. Marine Corps Drive, ITC Bldg., Suite 901  
Tamuning, Guam 96913

and answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in said complaint.

Dated: SEP 05 2019

**DANIELLE T. ROSETE**  
Clerk of Court

By:   
AMY C. ARCEO  
**DEPUTY CLERK**  
Superior Court of Guam

FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP 16 PM 12:17

CLERK OF COURT

IN THE SUPERIOR COURT OF GUAM

Civil Case No.: CV1080-19

GOVERNMENT OF GUAM

Plaintiff(s),

vs.

THE 3M COMPANY  
TYCO FIRE PRODUCTS LP  
CHEMGUARD, INC.  
BUCKEYE FIRE EQUIPMENT COMPANY  
KIDDIE FENWAL, INC.  
NATIONAL FOAM, INC.  
E.I. DU PONT DE NEMOURS AND CO.  
THE CHEMOURS COMPANY

Defendant(s).

NOTICE OF JUDGE ASSIGNMENT

To: Office of the Attorney General

As Directed by the Presiding Judge, pursuant to 7 GUAM CODE ANNOTATED, SECTION 4103 (as amended by public law 24-139) the above entitled matter is assigned to Presiding Judge ALBERTO C. LAMORENA III.

DATE: September 16, 2019

DANIELLE T. ROSETE  
Clerk of Court, Superior Court of Guam

By:

Joseph Bamba, Jr  
Deputy Clerk Supervisor

FILED  
SUPERIOR COURT  
OF GUAM

2019 SEP 18 AM 10:06

CLERK OF COURT

IN THE SUPERIOR COURT OF GUAM By: \_\_\_\_\_

<b>GOVERNMENT OF GUAM</b>	) Civil Case No. CV1080-19
	)
Plaintiff(s),	)
	)
<b>THE 3M COMPANY TYCO FIRE PRODUCTS) LP CHEMGUARD, INC. BUCKEYE FIRE ) EQUIPMENT COMPANY KIDDIE FENWAL, ) INC, NATIONAL FOAM, INC., E.I. DU PONT ) DE NEMOURS AND CO. THE CHEMOURS CO.</b>	<b>SCHEDULING NOTICE</b>
	)
Defendant(s).	)
	)

**TO:** Office of the Attorney General  
THE 3M COMPANY TYCO FIRE PRODUCTS  
LP CHEMGUARD, INC. BUCKEYE FIRE  
EQUIPMENT COMPANY KIDDIE FENWAL,  
INC, NATIONAL FOAM, INC., E.I. DU PONT  
DE NEMOURS AND CO. THE CHEMOURS CO.

Pursuant to Local Rules 16.1 and 16.2, it is hereby ORDERED that:

1. Counsel of record and all pro se litigants that have appeared in the case must meet and confer within fifteen (15) days after receipt of this Notice, but no later than sixty (60) days after filing of the complaint, prior to commencing discovery.
2. A proposed Scheduling Order and a proposed Discovery Plan shall be filed on or before November 18, 2019 Careful and immediate attention should be given to the directions in local Rules 16.1 and 16.2 to ensure complete and timely compliance with Guam Rules 16(b) and 26(f), and the Local Rules.
3. Plaintiff's counsel, or if the plaintiff is pro se, then the pro se plaintiff must take the lead in the preparation of the Scheduling Order. If a defendant is not contacted by a pro se plaintiff within the required time frame, the defendant's counsel shall contact the pro se plaintiff and arrange a meeting to comply with this Rule in the appropriate time frame.

Page 2 CV1080-19

4. Counsel of record and all pro se litigants that have appeared in this case are jointly responsible for submitting a Proposed Discovery Plan to the Court.
5. A Scheduling Conference shall be on November 18, 2019 at 2:00pm

Counsels are reminded that the filing of motions does not postpone discovery.

Date: September 17, 2019

Danielle T. Rosete  
Clerk, Superior Court of Guam

By: Evelyn E. Santos  
Courtroom/Chamber Clerk

RECEIVED VIA COURT BOX

I, the judge that a copy of the  
summons and complaint was placed in the

Aon

9/18/19

DRM

Deputy Clerk, Superior Court of Guam

# EXHIBIT C

INCH-POUND
MIL-PRF-24385F(SH)
w/INT. AMENDMENT 3
7 May 2019
USED IN LIEU OF
MIL-PRF-24385F(SH)
w/AMENDMENT 2
7 September 2017

## PERFORMANCE SPECIFICATION

### FIRE EXTINGUISHING AGENT, AQUEOUS FILM-FORMING FOAM (AFFF) LIQUID CONCENTRATE, FOR FRESH AND SEA WATER

This specification is approved for interim use by the Naval Sea Systems Command. Other activities in the Department of Defense may use this interim amendment or may continue using MIL-F-24385F w/AMENDMENT 2.

#### 1. SCOPE

1.1 Scope. This specification covers the requirements for aqueous film-forming foam (AFFF) liquid concentrate fire extinguishing agents consisting of surfactants and other compounds, as required, to conform to this specification. At the time of use they shall be diluted with fresh or sea water to form a fire-extinguishing solution. Certain proportioning equipment may produce AFFF solutions of extreme concentrations; requirements for such concentrations are specified herein.

1.2 Classification. Concentrates shall be of the following types, as specified (see 6.2):

Type 3 - To be used as three parts concentrate to ninety-seven parts water by volume solution.

Type 6 - To be used as six parts concentrate to ninety-four parts water by volume solution.

#### 2. APPLICABLE DOCUMENTS

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

#### SPECIFICATIONS

##### FEDERAL

- |          |   |
|----------|---|
| NN-P-71  | - Pallets, Material Handling, Wood, Stringer Construction, 2-Way and 4-Way<br>(Partial) |
| O-D-1407 | - Dry Chemical, Fire Extinguishing, Potassium Bicarbonate                               |

##### MILITARY

- |             |   |
|-------------|---|
| MIL-D-43703 | - Drum, Shipping and Storage, Molded Polyethylene |
|-------------|---|

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to [CommandStandards@navy.mil](mailto:CommandStandards@navy.mil), with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

AMSC N/A

FSC 4210

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

MIL-PRF-24385F(SH)  
w/INT AMENDMENT 3

## STANDARDS

### MILITARY

- MIL-STD-129 - Military Marking for Shipment and Storage
- MIL-STD-130 - Identification Marking of U.S. Military Property
- MIL-STD-147 - Palletized Unit Loads

(Copies of these documents are available online at <https://quicksearch.dla.mil>.)

2.1.2 Other Government publications. The following other Government publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

## PUBLICATIONS

### DEPARTMENT OF DEFENSE

- DoD QSM 5.1 - Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1

(Copies of this document are available online at <http://www.denix.osd.mil/edqw/documents/documents>.)

### DEPARTMENT OF TRANSPORTATION

- Code of Federal Regulations, Title 49

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

### MILITARY

#### DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER (DTNSRDC)

##### Standard Marine Bioassay Procedure for Shipboard Chemicals

(Application for copies should be addressed to Commander, David W. Taylor Naval Ship Research and Development Center, (Code 2865), Annapolis, MD 21402.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A342/A342M - Standard Test Methods for Permeability of Weakly Magnetic Materials
- D445 - Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity) (DoD adopted)
- D1141 - Standard Specification for Substitute Ocean Water
- D1331 - Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface-Active Agents
- D1796 - Standard Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure)
- D3953 - Standard Specification for Strapping, Flat Steel and Seals.
- D4814 - Standard Specification for Automotive Spark-Ignition Engine Fuel

MIL-PRF-24385F(SH)  
w/INT AMENDMENT 3

- |       |  |
|-------|--|
| D6199 | - Standard Practice for Quality of Wood Members of Containers and Pallets                            |
| E11   | - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves                             |
| E527  | - Standard Practice for Numbering Metals and Alloys (UNS)  |
| E729  | - Standard Practice for Conducting Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians |

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

**AMERICAN PUBLIC HEALTH ASSOCIATION**

Standard Methods for the Examination of Water and Waste Water

(Application for copies should be addressed to the American Public Health Association, 1015 15<sup>th</sup> Street NW, Suite 300, Washington, DC 20005.)

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

- NFPA No. 412 - Evaluating Foam Fire Fighting Equipment on Aircraft Rescue and Fire Fighting Vehicles

(Application for copies should be addressed to the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.)

**SAE INTERNATIONAL**

- SAE-AMS-STD-595 - Colors Used in Government Procurement

(Copies of this document are available online at [www.sae.org](http://www.sae.org).)

**UNIFORM CLASSIFICATION COMMITTEE, AGENT**

Uniform Freight Classification Ratings, Rules, and Regulations

(Application for copies should be addressed to the Uniform Classification Committee Agent, Tariff Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

**2.3 Order of precedence.** Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

**3. REQUIREMENTS**

**3.1 Qualification.** Liquid concentrate fire extinguishing agents furnished under this specification shall be products which are qualified for listing on the applicable Qualified Products List at the time set for opening of bids (see 4.3 and 6.4).

**3.2 Materials.** Concentrates shall consist of surfactants plus other compounds as required to conform to the requirements specified hereinafter. The material shall have no adverse effect on the health of personnel when used for its intended purpose.

**3.3 Concentrate characteristics.** Concentrates shall conform to the chemical and physical requirements shown in [table I](#).

**3.3.1 Film formation and sealability.** The foam produced film shall spread over the fuel surface and seal off vapor production to prevent sustained ignition (see 4.7.6).

MIL-PRF-24385F(SH)  
w/INT AMENDMENT 3

3.3.2 Stability. The concentrate (Type 3 or Type 6) and a 3 percent premix solution of Type 3 or a 6 percent premix solution of Type 6 as applicable shall conform to the following requirements after 10 days storage at 65 Celsius ( $^{\circ}\text{C}$ )  $\pm 2.0$   $^{\circ}\text{C}$  (see 4.7.10):

- a. Spreading coefficient: (See [table I](#))
- b. Foamability: (See [table I](#))
- c. Film formation and sealability: As specified in 3.3.1
- d. Fire performance, 28 square feet ( $\text{ft}^2$ ) fire, 1.5 and 3 percent of Type 3 and 3 and 6 percent of Type 6 fresh and sea water solutions: As specified in 3.4
- e. Stratification: No visible evidence following test (see 4.7.14)
- f. Precipitation: 0.05 percent by volume (see 4.7.15).

3.3.3 Compatibility. The concentrates of one manufacturer shall be compatible in all proportions with concentrate furnished by other manufacturers listed on the qualified products list. The material shall also be compatible with materials in inventory which were acquired under previous issues of this specification and known to be still in use in significant quantities. Information regarding these materials may be obtained from NAVSEA. The concentrate shall conform to the following requirements after 10 days storage at 65  $^{\circ}\text{C}$   $\pm 2.0$   $^{\circ}\text{C}$  (see 4.7.11):

- a. Foamability: (See [table I](#))
- b. Film formation and sealability: As specified in 3.3.1
- c. Fire performance 28  $\text{ft}^2$ , 3 percent of Type 3 and 6 percent of Type 6 fresh and sea water solution: As specified in 3.4
- d. Stratification: No visible evidence following test (see 4.7.14)
- e. Precipitation: 0.05 percent by volume (see 4.7.15).

MIL-PRF-24385F(SH)  
w/INT AMENDMENT 3TABLE I. Chemical and physical requirements for concentrates or solutions.

<b>Requirement</b>	<b>Values</b>		<b>Applicable publication</b>	<b>Test paragraph</b>
	<b>Type 3</b>	<b>Type 6</b>		
Refractive index, minimum	1.3630	1.3580	-	4.7.1
Viscosity, centistokes:			ASTM D445	4.7.2
Maximum at 5 °C	20	10		
Minimum at 25 °C	2	2		
Hydrogen ion concentration (pH)	7.0 to 8.5	7.0 to 8.5	-	4.7.5
Spreading coefficient, minimum	3	3	-	4.7.4
Foamability:				
Foam expansion, minimum	5.0	5.0	NFPA STD 412	4.7.5
Foam 25% drainage time, minutes, minimum	2.5	2.5	NFPA STD 412	4.7.5
Corrosion rate:				
General				
Cold rolled, low carbon steel (UNS G10100), milli in/yr, maximum	1.5	1.5	ASTM E527	4.7.7
Copper-nickel (90-10) (UNS C70600), milli in/yr, maximum	1.0	1.0	ASTM E527	4.7.7
Nickel-copper (70-30) (UNS N04400), milli in/yr, maximum	1.0	1.0	ASTM E527	4.7.7
Bronze (UNS C90500), milligrams, maximum	100	100	ASTM E527	4.7.7
Localized, corrosion-resistant (CRES) steel, (UNS S30400)	No pits	No pits	-	4.7.7
Perfluorooctanoic acid (PFOA) content, ppb, maximum	800 <sup>1/</sup>	800 <sup>1/</sup>	DoD QSM 5.1	4.7.8
Perfluorooctane Sulfonate (PFOS) content, ppb, maximum	800 <sup>1/</sup>	800 <sup>1/</sup>	DoD QSM 5.1	4.7.8
Dry chemical compatibility, burn-back, resistance time, seconds, minimum	360	360	-	4.7.9
Environmental impact:				
Toxicity, LC <sub>50</sub> , mg/L, minimum	500	1000	-	4.7.12.1
COD, mg/L, maximum	1000K	500K	-	4.7.12.2
$\frac{BOD}{COD} \times 20$ , minimum	0.65	0.65	-	4.7.12.3
NOTE:				
<sup>1/</sup> Current limit of quantitation.				

3.3.4 Total fluorine content. The total fluorine content of the AFFF shall be determined and shall not deviate more than 15 percent of the value determined and reported at time of qualification report (see 4.7.16.1).

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3.4 Fire performance. The foam shall conform to the fire performance requirements shown in [table II](#).

TABLE II. Fire performance.

	<b>FFF solutions, percent</b>		
	<b>1.5% of Type 3 3.0% of Type 6</b>	<b>3% of Type 3 6% of Type 6</b>	<b>15% of Type 3 30% of Type 6</b>
	<b>(Fresh and sea)</b>	<b>(Fresh and sea)</b>	<b>(Sea)</b>
28-ft <sup>2</sup> fire (see 4.7.13.1):			
Foam application time to extinguish, seconds, maximum	45	30	55
Burnback time of resulting foam cover, seconds, minimum	300	360	200
50-ft <sup>2</sup> fire (see 4.7.13.2):			
Foam application time to extinguish, seconds, maximum		50 (Sea only)	
Burnback time of resulting foam cover, seconds, minimum		360	
40-second summation, minimum		320	

3.5 Marking.

3.5.1 Identification marking shall be in accordance with MIL-STD-130. In addition, the marking on the containers (see 5.3) shall be in white characters against a green background for Type 3, a blue background for Type 6.

3.5.2 Two identical markings conforming to [figures 1](#) and [2](#) shall be applied to containers so that the markings are located diametrically opposite. The markings shall be applied on the containers in such a manner that water immersion contact with the contents of the containers, or normal handling will not impair the legibility of the marking. Paper labels shall not be used.

## 4. VERIFICATION

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).
  - (1) Examination of filled containers
  - (2) Quality conformance inspection.

4.3 Qualification inspection. Qualification inspection shall be conducted at a laboratory satisfactory to the Naval Sea Systems Command. Qualification inspection shall consist of the inspections and tests shown in [table III](#).

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TABLE III. Qualification and quality conformance inspections.

Examination or test	Reference paragraph		Qualification	Quality conformance
	Requirement	Test		
Refractive index	3.3	4.7.1	X	X
Viscosity	3.3	4.7.2	X	X
pH value	3.3	4.7.3	X	X
Spreading coefficient	3.3	4.7.4	X	X
Foamability	3.3	4.7.5	X	X
Film formation and sealability	3.3.1	4.7.6	X	X
General corrosion	3.3	4.7.7	X	
Localized corrosion	3.3	4.7.7	X	
PFOA content	3.3	4.7.8	X	
PFOS content	3.3	4.7.8	X	
Fluorine content	3.3.4	4.7.16	X	X
Dry chemical compatibility	3.3	4.7.9	X	
Stability	3.3.2	4.7.10	X	
Compatibility	3.3.3	4.7.11	X	
Environmental impact	3.3	4.7.12	X	
28-ft <sup>2</sup> fire test	3.4	4.7.13	X	
50-ft <sup>2</sup> fire test	3.4	4.7.13	X	X
Examination of filled containers		4.6		X
Torque to remove cap <sup>1/</sup>	5.1.1.1.1f	4.7.17.2	X	X

NOTE:

<sup>1/</sup> Torque test to be performed a minimum of 48 hours after initial closure.

4.3.1 Samples for qualification inspection. One hundred gallons of Type 3 and 200 gallons of Type 6 are required for the qualification inspection.

#### 4.4 Sampling for quality conformance inspection.

4.4.1 Inspection lot. A lot shall consist of all foam manufactured as one unchanged process batch and transferred from one mixing tank to the shipping container.

4.4.2 Sampling for examination of filled containers. As a minimum, the contractor shall randomly select a sample quantity from each lot of filled containers in accordance with table IV and examine them in accordance with 4.6, 5.1.1.1, and 5.1.1.2. The sample size depends on lot size. If one or more defects are found in any sample, the entire lot shall be rejected. The contractor has the option of screening 100 percent of the rejected lot for the defective characteristics, or providing a new lot, which shall be examined in accordance with the sampling plan contained herein. The contractor shall maintain for a period of three years after contract completion, records of inspections, tests, and any resulting rejections.

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TABLE IV. Sample size for examination of filled containers.

Lot size	Sample size
2-5	All
6-50	5
51-90	7
91-150	11
151-280	13
281-500	16
501-1200	19
1201-3200	23

4.4.3 Sampling for quality conformance inspection. Three filled 5-gallon containers shall be selected at random from each lot and used as one composite sample for the tests specified in 4.6, or three 5-gallon containers of the product shall be withdrawn from an agitated mixing tank prior to packaging. The results of the tests required by 4.5 shall be submitted to NAVSEA or the designated laboratory.

4.5 Quality conformance inspection. The samples selected in accordance with 4.4.3 shall be subjected to the quality conformance inspection of [table III](#). If the sample tested is found to be not in conformance with any of the quality conformance tests, the lot represented by the sample shall be rejected (see 6.3).

4.6 Examination of filled containers. Each sample filled container shall be examined for defects of construction of the container and the closure, for evidence of leakage, and for unsatisfactory markings. Each filled container shall also be weighed to determine the amount of contents.

4.7 Test procedure.<sup>1</sup> Test procedures shall be as follows:

4.7.1 Refractive index. The refractive index shall be determined at  $25^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ , using sodium vapor source lamp illumination.

4.7.2 Viscosity. The viscosity shall be determined at temperatures of  $5^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$  and  $25^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$  in accordance with ASTM D445, using capillary viscosimeters in the appropriate size.

4.7.3 pH value. The pH value shall be determined potentiometrically, using a pH meter with a glass electrode and a reference electrode, at  $25^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ .

4.7.4 Spreading coefficient. The spreading coefficient shall be determined with reference to cyclohexane in accordance with the following relationship:

Where:  $S_{a/b} = \gamma_b - \gamma_a - \gamma_i$

$S_{a/b}$  = Spreading coefficient

$\gamma_b$  = Surface tension of cyclohexane as determined in 4.7.4.1

$\gamma_a$  = Surface tension of AFFF solution as determined in 4.7.4.1

$\gamma_i$  = Interfacial tension between liquids as determined in 4.7.4.2

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<sup>1</sup> Where sea water is required for tests, synthetic sea water in accordance with ASTM D1141 shall be used. A sea salt mixture conforming to this standard may be purchased from Lake Products Company, Inc., P.O. Box 2248, St. Louis, Missouri 63043.

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**4.7.4.1 Surface tension.** The surface tension of  $3\pm0.05$  percent of Type 3 or  $6\pm0.1$  percent of Type 6 by volume in distilled water, as appropriate, and of reagent grade cyclohexane shall be determined with a DuNoy tensiometer, or equal, at  $23^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$  in accordance with ASTM D1331.

**4.7.4.2 Interfacial tension.** The interfacial tension between  $3\pm0.05$  percent of Type 3 or  $6\pm0.1$  percent of Type 6 by volume in distilled water, as appropriate, and reagent grade cyclohexane shall be determined with a DuNoy tensiometer, or equal, at  $23^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$  until the readings come to equilibrium and in accordance with ASTM D1331.

**4.7.5 Foamability.** The foam shall be generated by means of a special 2-gallons-per-minute (gal/min) test nozzle. The basic nozzle, as made by National Foam System, Inc., Lionville, Pennsylvania, or equal, shall be modified by shortening the length of the foam barrel from  $2\frac{1}{2}$  to  $1\frac{1}{4}$  inches, and by adding a "wing-tip" spreader on the outlet. The spreader shall have a  $\frac{1}{8}$ -inch wide, circular orifice,  $1\frac{1}{8}$  inches long. (It may be made by slightly compressing a Bernz-o-matic TX-1527, or equal, flame spreader.) A print of the nozzle construction is available from the Naval Research Laboratory, Code 6180, Washington, DC 20375. During foam sample collection, the nozzle inlet pressure shall be maintained at a gauge pressure of 100 pounds per square inch (lb/in<sup>2</sup>), and the solution temperature at  $23^{\circ}\text{C} \pm 5.0^{\circ}\text{C}$ . The nozzle shall be held at hip height and directed onto the backboard from a distance of 4 to 6 feet. The method and procedure shall be in accordance with NFPA 412. Foamability shall be run on 6 percent fresh and sea water solutions of the Type 6 concentrate and 3 percent fresh and sea water solutions of the Type 3 concentrate.

**4.7.6 Film formation and sealability.**

**4.7.6.1 Test equipment.** A CRES graduated measure of 1,000-milliliter (mL) capacity ( $4\frac{1}{2}$  inches in diameter, 5 inches deep; Cole-Parmer Co., Chicago, Illinois, or equal) shall be fitted with two retaining clips at the top edge. The clips serve to restrain a cone 5 inches in height and  $4\frac{3}{4}$  inches in diameter, made of 80-mesh perforated CRES, in an inverted position inside the measure. The 2-gal/min nozzle specified in 4.7.5 shall be used for foam production.

**4.7.6.2 Test procedure.** After placing 400 mL of water and 200 mL of 98-percent cyclohexane in the measure, 200 mL of freshly-made foam shall be poured onto the fuel. The inverted cone shall be pushed down into the measure, thereby pushing most of the foam aside but allowing the film-producing liquid to creep in through the mesh openings. A foam-free surface shall be created by manually scooping out most of the residual foam from the center of the cone. After a 1-minute waiting period, a pilot flame shall be passed over the fuel surface at a height of about  $\frac{1}{2}$  inch. A small flash is permitted, but no sustained ignition shall result, if an effective vapor seal is present. A 1-inch long pilot flame shall be provided with a hand-held propane cylinder fitted with a capillary tubing outlet.

**4.7.7 Corrosion.** The liquid for immersion of the metal specimens for general corrosion and localized corrosion tests shall consist of the concentrate diluted by 10 percent by volume with sea water.

**4.7.7.1 General corrosion.**

**4.7.7.1.1 Test specimens.** The test specimens shall consist of the following metals, in accordance with UNS designations (see ASTM E527): G10100 steel, C70600 copper-nickel alloy, N04400 nickel-copper, and C90500 bronze. All specimens, except the bronze, shall be milled to finished dimensions of approximately  $\frac{1}{16}$  inch thick,  $\frac{1}{2}$  inch wide, and 3 inches long. The bronze shall have sand cast faces and be approximately  $\frac{3}{16}$  inch thick,  $\frac{1}{2}$  inch wide, and 3 inches long. All specimens shall be degreased in acetone, rinsed with distilled water, and air dried before exposure. (Prepared metal specimens may be obtained from the Metaspec Company, Box 27707, San Antonio, Texas 78227-0707.)

**4.7.7.1.2 Test procedures.** Five weighted specimens of each metal shall be fully immersed in the test medium in a separate 600-mL beaker and held at room temperature for a period of 60 days. A watch-glass cover shall be used to retard evaporation. At the end of the exposure period, the weight-loss shall be determined and the corrosion rate calculated as required.

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**4.7.7.2.1 Test specimens.** The test specimens shall consist of UNS S30400 CRES milled to finished dimensions of approximately  $\frac{1}{16}$  inch thick,  $\frac{1}{2}$  inch wide, and 3 inches long. After degreasing with acetone, rinsing with distilled water, and air drying before exposure, the specimens shall be pretreated by immersion in a 1:9 concentrated nitric acid-water solution for the period of 5 minutes.

**4.7.7.2.2 Procedure.** Ten specimens shall be girdled lengthwise with a clean  $\frac{1}{16}$  to  $\frac{1}{8}$ -inch wide band of a good grade of gum rubber of a size such that the band is taut during the test. Because of the poor quality of most commercial rubber bands, it is recommended that the bands for this test be cut from  $1\frac{3}{4}$  inch flat width pure gum amber tubing (Preiser Scientific Rubber tubing, Pure Gum, Gooch type,  $\frac{1}{2}$ -inch thin wall, pure gum amber tubing, very elastic, especially made for Gooch crucibles, or equal). This tubing is most easily cut into uniform strips with a blade-type papercutter, but can also be cut with sharp shears. The specimens girdled with the rubber bands shall be placed in a 600-mL beaker so that no contact is made between individual specimens. A  $\frac{1}{4}$ -inch layer of glass beads shall be introduced into the beaker to aid in stabilizing specimen position. Enough liquid shall be added to completely immerse the specimens, and a watch-glass shall be placed over the beaker to retard evaporation (but allow air access) and act as a dust cover, and the assemblies allowed to stand at room temperature for 60 days.

**4.7.7.2.3 Results.** The specimens shall be monitored daily over the 60-day period to ascertain the presence or absence of pitting. These daily examinations shall be made without disturbing the test (other than removing the cover). Corrosion is customarily signaled by the appearance of a dark spot which, if removed after sufficient exposure, discloses a corrosion pit. If the suspected area cannot be positively identified by the naked eye, it can be at a magnification of 10X. At the end of the test, each specimen shall be inspected carefully with particular attention being given to the edges of the specimens and those areas of the specimens under or adjacent to the rubber bands. 10X magnification shall be used, if necessary.

**4.7.8 PFOA and PFOS content.** The tests for PFOA and PFOS content shall be conducted by a laboratory that is accredited by the DoD Environmental Laboratory Accreditation Program (ELAP) and tests in compliance with the “Per- and Polyfluoroalkyl Substances (PFAS) Using Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) with Isotope Dilution or Internal Standard Quantification in Matrices Other Than Drinking Water” table of DoD QSM Version 5.1. (A list of ELAP accredited laboratories can be found online at <http://www.denix.osd.mil/edqw/accreditation/accreditedlabs>. Under the “Method” drop-down list, select “PFAS by LCMSMS Compliant with QSM 5.1 Table B-15”. ) Test results shall be recorded from the lowest dilution possible while still meeting all of the requirements in the DoD QSM table. This may require results to be recorded from two different dilutions; one for PFOA and one for PFOS.

**4.7.8.1 PFOA content.** PFOA content shall be determined in accordance with 4.7.8. Results shall be expressed in parts per billion (ppb).

**4.7.8.2 PFOS content.** PFOS content shall be determined in accordance with 4.7.8. Results shall be expressed in ppb.

**4.7.9 Dry chemical compatibility.** The foam’s compatibility with potassium bicarbonate dry chemical extinguishing agent shall be determined by measuring the burnback time in the presence of dry chemical.

**4.7.9.1 Test materials.** The fuel shall be unleaded gasoline conforming to ASTM D4814. The dry chemical agent shall conform to O-D-1407. The sieve shall be an 8-inch diameter, 40-mesh sieve conforming to ASTM E11.

**4.7.9.2 Test procedure.** A 28-square-foot fire test shall be conducted in accordance with 4.7.13.1 using Type 3 or 6 AFFF sea water solution, as required. Before placing the burning pan, 1 pound of dry chemical agent shall be evenly distributed over the foam blanket with the aid of a sieve on a long handle. This shall be accomplished within a 30-second period so that the total time from end of foam application to placement of the burning pan will not be longer than 90 seconds. The burnback time shall be determined as in 4.7.13.1.4.

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#### 4.7.10 Stability.

4.7.10.1 Sample preparation. Samples of concentrate, and Type 3 and Type 6 AFFF fresh water and sea water solution, as appropriate, shall be prepared in sufficient quantity to perform the required tests. One liter (L) of each shall be placed in lightly stoppered glass cylinders. All samples shall then be stored at  $65^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$  for a period of 10 days. The samples shall then be subjected to the following tests:

- |   |          |
|---|----------|
| a. Spreading coefficient                  | 4.7.4    |
| b. Foamability                            | 4.7.5    |
| c. Film formation and sealability         | 4.7.6    |
| d. Fire performance (28 ft <sup>2</sup> ) | 4.7.13.1 |
| e. Stratification                         | 4.7.14   |
| f. Precipitation                          | 4.7.15   |

NOTE: In the preparation of the samples to be used for the precipitation test, the synthetic sea water shall be filtered prior to use.

#### 4.7.11 Compatibility.

4.7.11.1 Sample preparation. The Government will provide samples of appropriate qualified product(s) to manufacturers officially authorized to submit candidate material for qualification (see 3.3.3). Mixtures of the Type 3 and Type 6 concentrates to be tested shall be prepared in sufficient quantities to perform the required tests. (For qualification testing, the testing activity will determine the number of product mixtures to be evaluated and the ratio of product comprising these mixtures.) Additionally, 3 percent of Type 3 or 6 percent of Type 6 AFFF fresh water and sea water solutions shall be prepared from each concentrate mixture. One L of each shall be placed in lightly stoppered glass cylinders. The samples shall be stored at  $65^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$  for a period of 10 days. The samples shall then be subjected to the following tests:

- |   |          |
|---|----------|
| a. Foamability                            | 4.7.5    |
| b. Film formation and sealability         | 4.7.6    |
| c. Fire performance (28 ft <sup>2</sup> ) | 4.7.13.1 |
| d. Stratification                         | 4.7.14   |
| e. Precipitation                          | 4.7.15   |

#### 4.7.12 Environmental impact.

4.7.12.1 Toxicity. Toxicity test shall be performed on the Killifish (*Fundulus heteroclitus*) in accordance with ASTM E729, using dynamic procedures. The minimum acceptable dissolved oxygen content of water used in this procedure shall be 5 p/m.

4.7.12.2 Chemical oxygen demand (COD). COD shall be determined in accordance with procedures in Standard Method for the Examination of Water and Waste Water (latest applicable edition).

4.7.12.3 Biodegradability. Biodegradability shall be determined by dividing the value expressed in mg/L for the 20-day biological oxygen demand (BOD20) determined from 5-day BOD test in accordance with the procedure specified in Standard Methods for the Examination of Water and Waste Water (latest applicable edition) by the value expressed in mg/L for COD determined as specified in 4.7.12.2.

4.7.13 Fire test. No fire test shall be conducted when the wind speed is above 10 miles per hour (mi/hr). These tests are normally conducted indoors to avoid adverse weather conditions.

#### 4.7.13.1 Twenty-eight-square-foot fire test.

4.7.13.1.1 Test equipment. The fire test shall be conducted in a level, circular pan 6 feet in diameter, fabricated from  $\frac{1}{4}$ -inch thick steel with a 4-inch high side. A shallow water layer shall be used to protect the pan bottom and to ensure complete coverage of the area with fuel. The nozzle used for foam application shall be the 2 gal/min device specified in 4.7.5.

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**4.7.13.1.2 Test materials.** Foam shall be generated at  $23^{\circ}\text{C} \pm 5.0^{\circ}\text{C}$  from AFFF solutions made with fresh or sea water, as required, at concentration values shown in [table V](#). The fuel shall be 10 gallons of unleaded gasoline conforming to ASTM D4814.

**TABLE V. AFFF test concentration values.**

Solutions	Type 3	Type 6
Lean <sup>1/</sup>	$1.5 \pm 0.03$	$3 \pm 0.1$
Normal strength	$3 \pm 0.05$	$6 \pm 0.1$
Rich <sup>2/</sup>	$15 \pm 0.2$	$30 \pm 0.2$
<sup>1/</sup> One test with fresh water and one with sea water.		
<sup>2/</sup> One test with sea water.		

**4.7.13.1.3 Test procedure.** The fuel shall be dumped within a 30-second period. The fuel shall be ignited within 30 seconds of fueling and allowed to burn freely for 10 seconds. After the preburn period, the fire shall be attacked and extinguished as expeditiously as possible and the fire extinguishing time shall be recorded at the exact cessation of all flame, but foam application shall continue for a total of 90 seconds.

**4.7.13.1.4 Burnback procedure.** Within 60 seconds of the completion of foam application, a burning pan (1-foot diameter with 2-inch side) containing one gallon of unleaded gasoline shall be placed in the center of the 28-square-foot pan and a timer started. When it appears that the fire has spread outside the pan so that the burning will continue after pan removal, the pan shall be removed. The burnback time is that at which it is estimated that 7 square feet (25 percent) of the total area is involved in flames.

NOTE: Intermittent “flash-overs” may occur. They are characterized by creeping faint blue or invisible flames over the foam surface which usually self-extinguish. They are not considered a part of the burnback area unless sustained burning occurs. All isolated, sustained burning areas shall be included in arriving at the 7-square-foot total area.

**4.7.13.2 Fifty-square-foot fire test.**

**4.7.13.2.1 Test site.** The fire test shall be conducted on a level, circular area 8 feet in diameter. The base and surrounding wall shall be suitable for containment of the fuel on a substrate of water. The water depth shall be the minimum required to ensure complete coverage area with the fuel.

**4.7.13.2.2 Test equipment.** The nozzle used for foam application shall be the 2 gal/min device specified in 4.7.5, operated at a gauge pressure of 100 lb/in<sup>2</sup>.

**4.7.13.2.3 Test materials.** The foam shall be generated at  $23^{\circ}\text{C} \pm 5.0^{\circ}\text{C}$  from  $3 \pm 0.05$  percent of Type 3 or  $6 \pm 0.1$  percent of Type 6 AFFF solutions made with sea water. The fuel shall be 15 gallons of unleaded gasoline conforming to ASTM D4814.

**4.7.13.2.4 Test procedure.** The fuel shall be dumped into the area in less than 60 seconds and ignited in less than 30 seconds after fuel dumping is completed. After allowing a preburn period of 10 seconds, the fire shall be attacked and extinguished in an expeditious manner. At 10-second intervals after the start of foam application, observers shall estimate the percentage of fire area extinguished. The percentages at 10, 20, 30, and 40 seconds shall be totaled to give the “40-second summation” value. The exact extinguishing time shall also be recorded at the cessation of all flame, but foam application shall continue for a total of 90 seconds.

**4.7.13.2.5 Burnback procedure.** Within 60 seconds of the completion of foam application, a burnback test shall be conducted as specified in 4.7.13.1.4, except that the burnback area shall be 12.5 square feet (25 percent).

**4.7.14 Stratification.** The presence of stratification shall be determined by visual examination of the samples contained in the glass cylinders.

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4.7.15 Precipitation. The amount of precipitation shall be determined in accordance with the procedures of ASTM D1796.

4.7.16 Fluorine content.

4.7.16.1 Qualification. The total fluorine content shall be determined. The total fluorine content and the test procedure used to determine the content shall be furnished as part of the qualification inspection report.

4.7.16.2 Quality conformance inspection. The total fluorine content shall be determined in accordance with the test procedure furnished with the qualification inspection report (see 4.7.16.1). The total fluorine content shall be included in the quality conformance inspection report.

4.7.17 Packaging inspection. Sample packages and packs and the inspection of preservation, packaging, packing, and marking for shipment and storage shall be in accordance with the requirements of 4.6, section 5, and the documents specified therein. The magnetic permeability test (for metal handles of 5-gallon containers) of 4.7.16.1 and the torque test (for the pour cap of 5-gallon containers) of 4.7.17.2 shall be included.

4.7.17.1 Magnetic permeability (metal handles of 5-gallon containers). The metal handles of the 5-gallon containers shall be checked to determine conformance with the magnetic requirements of 5.1.1.1.1d using a permeability indicator, low-mu (GO-NO-GO) in accordance with ASTM A342/A342M.

4.7.17.2 Torque test (pour cap of 5-gallon container). The pour cap of the 5-gallon container shall be subjected to a torque test to determine conformance with 5.1.1.1.1f.

## 5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisitions. For the extent of applicability of the packaging requirements of referenced documents listed in section 2, see 6.5.)

5.1 Preservation-packaging. Preservation-packaging for Level A shall be as specified hereinafter.

5.1.1 The AFFF liquid concentrate shall be furnished in a 5-gallon or in a 55-gallon plastic container as specified (see 6.2d).

5.1.1.1 Five-gallon plastic container. The container shall be molded polyethylene as specified herein. The container shall be as follows:

a. Capacity	5 gallons (min.)
b. Height, body (overall)	15 inches (max.)
c. Diameter, body (overall)	11¾ inches (max.)
d. Pour opening (inside dia.)	1½ inches (min.)

5.1.1.1.1 The container shall meet the requirements of Department of Transportation Specification Number 34 as specified in the Code of Federal Regulations, Title 49, Part 178.19, and as follows:

- a. Shall be stackable and self-supporting.
- b. Shall be provided with a threaded-type plastic cap fitted with a gasket for the pour opening.
- c. May be provided with a vent opening having an easily punctured membrane. When furnished, vent opening shall be provided with a threaded type plastic cap.
- d. Shall be provided with an integrally molded or recessible plastic or metal handle. Metal handles shall not exceed a magnetic permeability of 2.0.
- e. Shall have colors conforming to 5.1.1.3, Type 3 green, Type 6 blue.
- f. The torque required to remove the pour opening cap shall not exceed 50 inch-pounds.

5.1.1.2 Fifty-five gallon container. The 55-gallon container shall be molded polyethylene, Size 4, conforming to MIL-D-43703.

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**5.1.1.3 Exterior color and coating.** The green color (see 3.5) shall be an approximate match to color number 14187 of SAE-AMS-STD-595. The blue color (see 3.5) shall be an approximate match to color number 15123 of SAE-AMS-STD-595.

**5.2 Packing.** For Level A no further packing is required.

**5.2.1** Method of shipment shall comply with Uniform Freight Classification Ratings, Rules, and Regulations or other carrier rules as applicable to the mode of transportation.

**5.2.2 Palletization.**

a. Thirty-six 5-gallon plastic containers shall be palletized in accordance with the requirements of MIL-STD-147, Load Type XVII. Pallets conforming to NN-P-71, Type V, Class 1, wood group optional, Size 2, are acceptable. Containers shall be properly and firmly nested and arranged to ensure a snug, non-shifting load. Pallet dimensions may be adjusted to ensure a snug, non-shifting load, but shall not exceed 43 by 52 inches.

b. Inverted caps. The inverted cap shall be the open sheathing type, wood group optional.

c. Top wood cap. The top wood cap shall be the closed sheathing (plywood) wood cap, wood group optional for slats. In addition, each corner of the plywood cap shall be secured to the end and side slats with strapping. Strapping shall be  $\frac{3}{4}$  inch by 0.035 inch and shall extend a minimum of 3 inches into the plywood top and slats. Nails used to secure the strapping shall be clinched.

d. Strapping. All primary, secondary, auxiliary, and horizontal strapping shall not be less than  $1\frac{1}{4}$  inches by 0.035 inch. Strapping shall conform to ASTM D3953, Type I, Finish B. Cross ties shall be applied in accordance with MIL-STD-147.

e. Side frames. Minimum size of side frame members shall be a nominal 1 by 6 inches conforming to Group I, II, III, or IV of ASTM D6199. Nails used to secure flat surfaces of side frames shall be clinched not less than  $\frac{1}{4}$  inch.

**5.3 Marking.** In addition to the marking specified in 3.5 and any special marking required (see 6.2), containers and palletized unit loads shall be marked in accordance with MIL-STD-129.

**6. NOTES**

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

**6.1 Intended use.** The concentrate is intended for use in mechanical foam generating equipment such as fire-fighting trucks or foam sprinkler systems for extinguishing fires in flammable liquids such as gasoline or fuel oils. Type 6 is intended for use in proportioners designed to dispense only the 6-percent solution (usually shipboard fire protection systems). Type 3 may be used in any equipment capable of proportioning at variable rates or at fixed 3-percent solution.

**6.2 Acquisition requirements.** Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. The specific issue of individual documents referenced (see 2.1.1 and 2.2).
- c. Type of concentrate required (see 1.2).
- d. Size of container required (see 5.1.1).
- e. Special marking, if required (see 5.3).

**6.3 Consideration of data requirements.** The following data requirements should be considered when this specification is applied in a contract. The applicable Data Item Description (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirements for a DD Form 1423.

Reference paragraph	DID number	DID title	Suggested tailoring
4.5	DI-T-2072	Test report	-

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The above DID was cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL No. 24385 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to [CommandStandards@navy.mil](mailto:CommandStandards@navy.mil). An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at <https://assist.dla.mil>.

6.4.1 Provisions governing qualification. Copies of SD-6 "Provisions Governing Qualification" are available online at <https://quicksearch.dla.mil> or <https://assist.dla.mil>.

6.5 Sub-contracted material and parts. The packaging requirements of referenced documents listed in section 2 do not apply when material is acquired by the contractor for incorporation into the concentrate and lose separate identity when the concentrate is shipped.

6.6 PFOA and PFOS content. The DoD's goal is to acquire and use a non-fluorinated AFFF formulation or equivalent firefighting agent to meet the performance requirements for DoD critical firefighting needs. The DoD is funding research to this end, but a viable solution may not be found for several years. In the short term, the DoD intends to acquire and use AFFF with the lowest demonstrable concentrations of two particular per- and PFAS; specifically PFOS and PFOA. The DoD intends to be open and transparent with Congress, the Environmental Protection Agency (EPA), state regulators, and the public at large regarding DoD efforts to address these matters. AFFF manufacturers and vendors are encouraged to determine the levels of PFOS, PFOA, and other PFAS in their products and work to drive these levels toward zero while still meeting all other military specification requirements.

6.7 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

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THIS END UP

U.S.

AQUEOUS FILM FORMING FOAM (AFFF) LIQUID CONCENTRATE

In accordance with

DEPARTMENT OF DEFENSE SPECIFICATION MIL-PRF-24385

TYPE 3 (3%)

NSN \_\_\_\_\_

This fire extinguishing concentrate is for use by dilution with water in fixed or mobile systems. It may be used alone or in combination with "twinned" dry chemical equipment. The concentrate may be diluted for use in flow proportioning equipment with sea water or fresh water at volume proportions of three gallons concentrate to 97 gallons water. It may also be diluted for ready-use storage at a three percent premixed foam solution with fresh water. For ready use do not store below 35 °F and avoid prolonged storage above 120 °F. Only mix with other Type 3 liquid concentrate in accordance with MIL-PRF-24385 and water.

MANUFACTURER'S NAME

CORPORATE ADDRESS

MANUFACTURING ADDRESS

PRODUCT NAME

BATCH NO.

DATE OF MANUFACTURE

FIGURE 1. Type 3 container markings.

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THIS END UP

U.S.

AQUEOUS FILM FORMING FOAM (AFFF) LIQUID CONCENTRATE

In accordance with

DEPARTMENT OF DEFENSE SPECIFICATION MIL-PRF-24385

TYPE 6 (6%)

NSN \_\_\_\_\_

This fire extinguishing concentrate is for use by dilution with water in fixed or mobile systems. It may be used alone or in combination with "twinned" dry chemical equipment. The concentrate may be diluted for use in flow proportioning equipment with sea water or fresh water at volume proportions of six gallons concentrate to 94 gallons water. It may also be diluted for ready-use storage at a six-percent premixed foam solution with fresh water. For ready use do not store below 35 °F and avoid prolonged storage above 120 °F. Only mix with other Type 6 liquid concentrate in accordance with MIL-PRF-24385 and water.

MANUFACTURER'S NAME

CORPORATE ADDRESS

MANUFACTURING ADDRESS

PRODUCT NAME

BATCH NO.

DATE OF MANUFACTURE

FIGURE 2. Type 6 container markings.

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CONCLUDING MATERIAL

Preparing activity:  
Navy – SH  
(Project 4210-2019-003)

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 the ASSIST Online database at <https://assist.dla.mil>.