

SRR-CWDA-2013-00134

Revision 0

NOV 12 2013

Sherri R. Ross, Program Manager
Waste Removal and Tank Closure
U.S. Department of Energy
Waste Disposition Programs Division
Savannah River Operations Office

Dear Ms. Ross:

**FOLLOW-UP IN SUPPORT OF U.S. NUCLEAR REGULATORY COMMISSION
MONITORING ACTIVITIES FOR SALT WASTE DISPOSAL**

Ref:

1. ML13199A434, *U. S. Nuclear Regulatory Commission June 26-27, 2013, Onsite Observation Visit Report for the Savannah River Site Saltstone Disposal Facility (Docket No. PROJ0734)*, U.S. Nuclear Regulatory Commission, Washington, DC, August 23, 2013.
2. X-SPP-Z-00003, *Specification for Procurement of Slag for the SPF*, Savannah River Site, Aiken, SC, Revision 2, February, 2011.
3. ASTM 989 C-989-09, *Standard Specification for Slag Cement for Use in Concrete and Mortars*.
4. *Final Report Comparison of Wasteform Mixtures*, SIMCO Technologies, Quebec, Canada, August, 2012.
5. ML073461038, *Nuclear Regulatory Commission Onsite Observation Report for the Savannah River Site Saltstone Production and Disposal Facility*, U.S. Nuclear Regulatory Commission, Washington, DC, January 31, 2008.
6. X-SPP-Z-00004, *Specification for Procurement of Portland Type II Cement for the SPF*, Savannah River Site, Aiken, SC, Revision 3, February, 2011.
7. X-SPP-Z-00002, *Specification for Procurement of Thermally Beneficated Class F Fly Ash for SPF*, Savannah River Site, Aiken, SC, Revision 5, December, 2012.

8. ML12286A191, *U. S. Nuclear Regulatory Commission August 6-7, 2012, Onsite Observation Visit Report for the Savannah River Site Saltstone Disposal Facility (Docket No. PROJ0734)*, U.S. Nuclear Regulatory Commission, Washington, DC, November 19, 2012.
9. ML13010A499, *U. S. Nuclear Regulatory Commission December 6, 2012, Onsite Observation Visit Report for the Savannah River Site Saltstone Disposal Facility (Docket No. PROJ0734)*, U.S. Nuclear Regulatory Commission, Washington, DC, February 15, 2013.
10. SRR-CWDA-2013-00111, *Saltstone Disposal Facility Post-Operations / Pre-Closure Surveillance and Maintenance Program Plan*, Savannah River Site, Aiken, SC, Revision 0, August, 2013.
11. ML13100A076, *U. S. Nuclear Regulatory Commission Plan for Monitoring Disposal Actions Taken by the U. S. Department of Energy at the Savannah River Site Saltstone Disposal Facility in Accordance with the National Defense Authorization Act for Fiscal Year 2005, Revision 1*, U. S. Nuclear Regulatory Commission, Washington, DC, September, 2013.
12. SRNS-STI-2013-00024, *Savannah River Site Environmental Report for 2012*, Savannah River Site, Aiken, SC, 2013.
13. SRNL-STI-2013-00390, *Results for the Second Quarter 2013 Tank 50 WAC Slurry Sample, Chemical and Radionuclide Contaminants*, Savannah River Site, Aiken, SC, Revision 0, July 2013.

The U.S. Nuclear Regulatory Commission (NRC) conducted an onsite observation visit for the Saltstone Disposal Facility under their monitoring role per Section 3116 of the *Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005*. The observation visit was held on June 26-27, 2013. As a result of the observation visit there were several follow-up actions for which DOE was responsible (Reference 1). The follow-up actions from the June visit included the following:

- 2013-01-1. DOE to provide to NRC information on all current admixtures in use.
- 2013-01-2. DOE to evaluate information available regarding blast furnace slag properties and provide to NRC:
 - Crystalline versus glass
 - Proportion of slag oxide types
 - Age of slag from time of grinding
 - Temperature during storage
- 2013-01-3. DOE to evaluate previously provided information regarding QA for dry feeds. Provide updated information, if any, to NRC.

In regards to follow-up action 2013-01-1, the current admixtures that may potentially be utilized in the production of saltstone include Daratard 17, a set retarder, and Xiameter® ACP-3183 Antifoam Compound. Daratard 17 has not been used for approximately the last year of

production but continues to be maintained for potential use if needed. During the June, 2013 visit there was discussion regarding a “new” antifoam admixture. The “new” antifoam is Xiameter® ACP-3183 Antifoam Compound. However, as discussed during the visit, the change in antifoam agent is a change in brand name only. The Xiameter® ACP-3183 Antifoam Compound is equivalent to Dow Corning® Q2-3183A Antifoam, the previously used antifoam agent. Information on Xiameter® ACP-3183 Antifoam Compound and equivalency to the previously used antifoam agent is provided in Attachment 1. Evaluation to discontinue use of the antifoam agent is currently underway and recent saltstone production runs have been completed without the addition of an antifoam agent. DOE is continuing to evaluate the need for admixtures with the goal of being able to permanently discontinue the use of admixtures in the saltstone production process.

Information on blast furnace slag properties, follow-up action 2013-01-02, is being provided in several forms. The procurement specification utilized for the blast furnace slag is being provided with this transmittal (Reference 2). As described in the procurement specification, the blast furnace slag is Ground Granulated Blast Furnace Slag (GGBFS) which, with a few exceptions as noted in the specification, is required to conform with ASTM C-989 (Reference 3). In addition, an analysis of the chemical composition of GGBFS was performed as part of wasteform testing documented in Table 2 of *Final Report Comparison of Wasteform Mixtures* (Reference 4), which was previously provided to the NRC and is available on ADAMS under Accession Number ML12345A264.

Information regarding quality assurance for dry feeds, follow-up action 2013-01-3, was previously discussed during one of the initial NRC onsite observation visits in October, 2007 (Reference 5). During the visit NRC personnel reviewed the dry feeds purchase specifications, receipt inspection documentation, and applicable Certificates of Analysis. Documentation was reviewed by NRC staff at SRS and hardcopy/electronic copies of the documentation were not requested by the NRC. In addition to the GGBFS specification being provided in response to follow-up action 2013-01-2, the current purchase specifications for cement (Reference 6) and fly ash (Reference 7) are also being provided as part of this transmittal. Copies of the Certificates of Analysis and other quality assurance receipt documentation for dry feeds deliveries are retained as hardcopies and are available for review by the NRC.

In addition to follow-up actions from the June 2013 visit, documentation to close two follow-up actions from the August 2012 observation visit (Reference 8) is also being provided with this transmittal:

- 2012-02-2: *DOE to describe the expected surveillance and maintenance program for cell penetrations after operations and prior to final site closure.*
- 2012-02-3: *DOE to describe the plans to maintain or close the drain water removal system after operations and prior to final closure (e.g., maintenance of instrumentation for liquid detection)*

As discussed during the December 2012 observation visit (Reference 9), the follow-up actions were expected to be completed in Fall 2013. To close these two items, *Saltstone Disposal Facility Post-Operations / Pre-Closure Surveillance and Maintenance Program Plan* (Reference 10) is being provided with this transmittal.

The NRC monitoring plan for the Saltstone Disposal Facility outlines a list of periodic DOE documents, in Table 1-1 of the monitoring plan, the NRC utilizes in support of their monitoring responsibilities (Reference 11). One of the documents included on the list is the annual SRS environmental report. The SRS environmental report for 2012 was recently issued and is now available (Reference 12). The 2012 environmental report is available on the World Wide Web at the following address: <http://www.srs.gov/general/pubs/ERsum/index.html>. In addition, the "Tank 50 WAC Sample Analysis" for the second quarter of 2013 has been issued and is being provided as part of this transmittal (Reference 13).

This transmittal closes all of the follow-up actions from the June 2013 observation visit as well as two additional follow-up actions from the August 2012 visit.

If you have any questions please contact me at 557-8960.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. A. Thomas', with a stylized, cursive script.

Steven A. Thomas
Deputy Manager
Closure & Waste Disposal Authority

SAT/lr

Att.

c: K. A. Hauer, 705-1C
M. N. Borders, 704-S
A. J. Tisler, 707-13E
K. H. Rosenberger, 705-1C
F. M. Smith, 705-1C

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M. J. Mahoney, 705-1C
A. V. Staub, 766-H



XIAMETER[®] ACP-3183 Antifoam Compound

Foam preventative in industrial applications

FEATURES

- Dispersible in water and organic solvents

COMPOSITION

- Silicone-organic glycol mixture
- Pourable liquid

APPLICATIONS

XIAMETER[®] ACP-3183 Antifoam Compound gives excellent performance in a wide range of applications including extreme pH systems. Typical uses include:

- Solvent washes
- Soluble cutting oils
- Semi-synthetic fluids
- Glycol processing
- Industrial chemicals

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER[®] sales representative prior to writing specifications on this product.

Test	Unit	Result
Appearance		Creamy white
Active Ingredient	%	100
Specific Gravity at 25°C (77°F)		1.0
Viscosity at 25°C (77°F)	cp	1,800-3,500
Recommended Dispersants		Cool water, glycols

DESCRIPTION

XIAMETER ACP-3183 Antifoam Compound is a foam control agent that is 100 percent active. Effective in both aqueous and nonaqueous systems, it can be used in concentrations as low as one part per million.

3.34 ounces in 500 gallons = 50 ppm
6.67 ounces in 1,000 gallons = 50 ppm

16.68 ounces in 2,500 gallons = 50 ppm
5.0 quarts in 25,000 gallons = 50 ppm

HOW TO USE

Amount Needed

XIAMETER ACP-3183 Antifoam Compound works effectively in very low concentrations. One to 100 parts of antifoam per million parts foamer are sufficient to eliminate most foams. Begin trials at higher use levels (50 ppm active silicone), then work down to the level of foam control desired. The following are parts per million equivalents:

Adding the Antifoam

To produce optimal foam control, the antifoam must be completely dispersed in the foaming medium. Follow these steps to achieve complete dispersion:

1. Agitate the product prior to use.

2. Predilute with 3 to 10 parts of a suitable low-viscosity diluent to aid in dispersion. Add the antifoam to the diluent with slow mixing. Prediluted material should be used immediately. Note: When using any solvent, always provide adequate ventilation. Follow precautions on solvent container label. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment.
3. Add the antifoam prior to the point where foaming occurs within the system, if possible.

PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEB SITE AT WWW.XIAMETER.COM.

STORAGE

Product should be stored at or below 32°C (90°F) in original, unopened containers. The most up-to-date shelf life information can be found on the XIAMETER Web site in the Product Detail page under Sales Specification.

XIAMETER ACP-3183 Antifoam Compound has a flash point greater than 101.10°C (213.98°F).

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

SHIPPING LIMITATIONS

None.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.



Chemical Equivalency Notice

This certificate is offered to assure the purchaser of the following product's quality and equivalency to Dow Corning® brand product for the purpose of use at the purchaser's location.

XIAMETER® ACP-3183 ANTIFOAM COMPOUND

is equivalent to:

DOW CORNING(R) Q2-3183A ANTIFOAM

Products sold through the XIAMETER® business model are manufactured to the same standards you expect from Dow Corning. We typically use the same manufacturing facilities, processes, test methods, and equipment as used for the Dow Corning products, though we reserve the right to make safety, efficiency and maintenance updates as appropriate.

We review our production process periodically, which may result in changes to statements of chemical equivalency, so you should refer to the site to ensure you are viewing an up-to-date certificate. Please refer to the product details pages on www.xiameter.com for a general description of product characteristics and sales specifications.

This certificate is not intended as a substitution agreement for applications where products are specified. In addition, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer tests to ensure that the products are safe, effective and fully satisfactory for the intended end-use.

If you have any questions, please [contact us](#).

XIAMETER® is a Registered Trademark of Dow Corning Corporation.
SILASTIC® is a Registered Trademark of Dow Corning Corporation.
DOW CORNING® is a Registered Trademark of Dow Corning Corporation.

Revised: 13-Dec-2012



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invent the future.™*

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Frequently Asked Questions

Answers to your questions about the *Dow Corning®* and XIAMETER® brands.

As we focus on our *Dow Corning®* brand to provide innovative and custom silicon-based solutions and expand our XIAMETER® brand to offer thousands of our standard silicone products online, you may have questions. Here are answers to some of the most frequently asked questions we've received about the Dow Corning and XIAMETER brands.

- Why is Dow Corning transitioning more products to the XIAMETER brand?
- What's in it for me?
- What's the difference between "standard" silicones and "specialty" silicones?
- What products are transitioning to the XIAMETER brand?
- What will not change?
- Do I have to purchase from both the *Dow Corning* and XIAMETER brands separately?
- When will I be able to access the wider range of XIAMETER brand products?
- What language options do I have on [www.xiameter.com](#)?
- Who can I contact if I have additional questions?

Q: Why is Dow Corning transitioning more products to the XIAMETER brand?

This expansion is the result of customer input and an ongoing product life cycle approach we apply to our business. We've heard you and other customers say you want more innovation from Dow Corning. We've also heard customers say they want additional cost-effective products from Dow Corning. Transitioning these products to the XIAMETER brand from Dow Corning helps us provide the capability to deliver both.

Since we first launched our XIAMETER® business model in 2002, it has proven very successful in providing our customers with a long-term business advantage. This is the next step in that journey. Additionally, by providing standard products more efficiently through the XIAMETER business model, we are able to create higher value solutions and innovation projects that will be delivered to the marketplace via the *Dow Corning®* brand.

Q: What's in it for me?

When you need innovative solutions in the form of specialty silicones and other silicon-based materials, the Dow Corning brand will continue to give you an edge in the marketplace by delivering higher value for your applications with Dow Corning brand custom formulations, and high-performance products and solutions. Our innovation in materials and service, combined with our deep market insight, will help you solve your toughest challenges.

For all your standard silicone needs, our XIAMETER brand online ordering platform is a highly convenient way to access a broad range of products. And you have options with the XIAMETER brand, such as order quantity options, credit term options, supply agreements to secure price or volume, and the ability to purchase from distribution. In other words, you get exactly what you have told us you need—high-quality standard silicone products at market-based prices.

Q: What's the difference between "standard" silicones and "specialty" silicones?

Standard products are products that are chemically equivalent and/or easily substituted by products from other suppliers; they compete primarily on price and availability. Specialty silicones, on the other hand, are unique materials with unique properties and performance capabilities. Dow Corning markets our specialty silicones under the Dow Corning brand, and sells standard silicones exclusively through the XIAMETER brand.

Q: What products are transitioning to the XIAMETER brand?

The products moving to the XIAMETER brand include a variety of silicone emulsions, fluids, rubbers, sealants, and silanes.

The Dow Corning brand will continue to be your source for innovative specialty materials and services. Our other specialized product brands, such as *Molykote® Silastic®* and DEFLEXION™ will continue to be offered to you as well.

How can we help you today?

Consult with a Dow Corning expert to evaluate your specific needs

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Learn more about XIAMETER and our solutions

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Q: What will not change?

Even though brand and product names will change, materials sold through the XIAMETER brand will be manufactured to the same standards—and on the same manufacturing equipment—as they always have been. The chemical makeup of the materials remains the same.

And, of course, you can depend on Dow Corning's passion for innovation. When customers need innovative solutions in the form of specialty silicones and other silicon-based materials, the Dow Corning brand will continue to give its customers an edge in the marketplace by delivering higher value for applications with our custom formulations, and high-performance products and solutions.

Q: Do I have to purchase from both the *Dow Corning* and XIAMETER brands separately?

Specialty silicones can still be ordered directly from the Dow Corning brand and/or from our distribution networks - depending on the product.

In order to provide you with the most cost-effective options, purchases for standard silicones will be ordered from the XIAMETER brand at www.xiameter.com. This will ensure proper processing of orders including order confirmations, shipping notifications and invoicing.

For customers who don't have access to the Internet, XIAMETER® customer service representatives will enter XIAMETER® orders by telephone for a slight surcharge.

Q: When will I be able to access the wider range of XIAMETER brand products?

Starting on October 1, 2011, you will be able to purchase the transitioning products – part of a selection of thousands of standard silicone products – from www.xiameter.com or through a local distributor – depending on the volumes you want to buy. The products will be available for purchase under the Dow Corning brand until December 31, 2011; after that the transitioning products will be sold exclusively through the XIAMETER brand. They will be available for shipment until March 31, 2012.

Q: What language options do I have on www.xiameter.com?

The XIAMETER® web site is available in English, Chinese, Korean, Japanese and Portuguese.

Q: Who can I contact if I have additional questions about these changes?

Contact your Dow Corning seller or XIAMETER® trader if you have any questions or comments about these changes. Click on the "contact us" link at the top of this page to request more details.

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