# LONG TERM RETARDANT TECHNICAL DATA SHEET - PART 2

**(Reference FSH 5160)**

FS-5100-0039 (REV. 04/2026)
OMB: 0596-0182
Exp: XX/XXXX/2025

**Product Name:** _____

**Submitting Company:** _____

**Formulation Identification:** _____

**Mix Ratio Range:**_____ lb/gal $H_2O$ **OR** _____ gal/gal $H_2O$ (Fill in one blank.)

If the submitted product is the result of a chemical reaction, provide information explaining the reaction process and typical residual quantities of the reaction ingredients. (Attach a separate sheet if needed.)

FOR REVIEW ONLY

**Provide the data, graphs, or tables listed below for each mix ratio for which evaluation has been requested.**

Measure viscosity using a Brookfield rotational viscometer (or equivalent) at 60 rpm. It is recommended to use spindle 2 or 3 for viscosities between 1 and 500 centipoise and spindle 4 for viscosities greater than 500 centipoise. Other suitable spindles may be used, just indicate as such in the text field.

1. **A graph of water enhancer mixture viscosity versus time since mixing, at a temperature test of 70 °F (21 °C). At a minimum, include viscosity at 10 minutes, 30 minutes, 60 minutes, 4 hours, 8 hours, and 24 hours, after mixing.**

2. **A table of enhanced water mixture viscosity versus temperature of water used for mixing. Viscosity shall be measured at 10 minutes, 30 minutes, 1 hour, and 24 hours following mixing. Temperatures of the tap water used for mixing shall be 40 °F (4 °C), 70 °F (21 °C), and 100 °F (38 °C).**

3. **A table of enhanced water mixture viscosity at 70 °F (21 °C), 1 hour and 24 hours following mixing, versus the mix ratio. Provide data for the product concentrations as follows: 0.25, 0.5, and 0.75 percent below the target mix ratio and 0.25, 0.5, and 0.75 percent above the target mix ratio. For example, if the target mix ratio is 2.0 percent, include data for solutions at 1.25 percent, 1.5 percent, and 1.75 percent, 2.0 percent, 2.25 percent, 2.5 percent, and 2.75 percent.**

4. **A table of hardness and conductivity versus viscosity of the enhanced water mixture at 70 °F (21 °C) for 10 minutes, 30 minutes, 45 minutes, and 1 hour after mixing.**

5. **Other data or information related to product stability and/or flow characteristics that might be helpful during the evaluation.**

## PAPERWORK REDUCTION ACT STATEMENT

According to the Paperwork Reduction Act of 1995, a Federal agency may not conduct or sponsor, and a person is not required to respond to, an information collection request unless it displays a valid Office of Management and Budget (OMB) control number. The valid OMB control number for this information collection request is 0596-0182. Response to this information collection request is required to obtain or retain benefits. The authority for this information collection request is in accordance with the signed collection agreement between your company and the USDA Forest Service, National Technology and Development Program. The time required to complete this information collection request is estimated to average 1.5 hours per response, including the time for reviewing instructions, searching existing data sources, collecting and maintaining the data needed, and completing and reviewing the information collection request. Send comments regarding this burden estimate or any other aspect of this information collection request, including suggestions for reducing the burden, to Forest Service Information Collections Officer, SM.FS.InfoCollect@usda.gov, with OMB control number 0596-0182 in the subject line.

## NONDISCRIMINATION STATEMENT

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit the completed form or letter to USDA by (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

FOR REVIEW ONLY