

**OHD L-4
METHODS OF TEST FOR
NON-VOLATILE CONTENT OF SILICONE SEALANTS**

- I. **SCOPE.** The purpose of this method is to determine the percent non-volatile content of rapid cure, self-leveling silicone joint sealants by measurement of change in weight of material.
- II. **APPARATUS.**
- A. **Timer**, readable in one hour increments.
 - B. **Analytical Balance**, readable to 0.0001 g.
 - C. **Desiccator**, containing Drierite.
 - D. **Aluminum Weight Dish**, 5/8 x 2.5 inch (1.5 x 60 mm)
 - E. **Forced Draft Oven**, capable of maintaining a temperature of 482° F ± 9° F (250° ± 5° C.)
- III. **REAGENTS.**
- A. Reagent grade acetone.
 - B. Reagent grade toluene.
- IV. **PROCEDURES.**
- A. Preheat 2 weighing dishes per sealant at 482° F ± 9° F (250° ± 5° C.) for 10 minutes. Cool dishes to room temperature in desiccator and then weigh to the nearest 0.001 g (W_2).
 - B. Weigh duplicate samples of approximately 3 g of each sealant into pre-weighed dishes. Then weigh sample plus dish to the nearest 0.001 g (W_2).
 - C. Add approximately 3 ml of acetone or toluene, depending on chemical makeup of sealant, and mix thoroughly.
 - D. Place dish plus sample immediately into 482° F ± 9° F (250° ± 5° C.) forced draft oven and set timer for 2 hours. **Note:** It is assumed that 2 hours is sufficient time to bring the sample to constant weight.
 - E. Remove samples from oven, cool to room temperature in desiccator, and reweigh to the nearest 0.001 g (W_3).

V. **CALCULATIONS.** Calculate the results as follows:

$$\% NV = \frac{W_3 - W_1}{W_2 - W_1} \times 100$$

Where:

W_1 = Weight of dish in grams,
 W_2 = Weight of dish and sample in grams,
 W_3 = Weight of dish and sample after heating,
NV = Non-volatile.

VI. **REPORT.** Average the results of the duplicate samples and report the non-volatile content to the nearest 0.1 percent.