

**SERVICE BULLETIN NUMBER: WB-031617-1**

**DATE: 3/16/2017**

**MODEL: All Products**

**TOPIC: Crackle Test**

**INSTRUCTIONS:**

The crackle test is a simple and cost-effective way to identify the presence of water contamination in oil. Contamination has three stages; free, emulsified, and dissolved.

*Note: Many resources are available regarding the effects of water contamination and the crackle test. This bulletin will not cover them all.*

**You will need:** A surface that is capable of achieving and sustaining a surface temperature of 380°F and a clean container to gather the sample. Note: For the test Weller used a SKF bearing heater pictured below.



**Safety FIRST!** Review all SDS prior. Test must be completed in a well-ventilated area as it will produce fumes and vapors that can be hazardous. Wear appropriate PPE.

**Test:**

1. Preheat surface to 380°F
2. Using a clean uncontaminated container gather sample
3. Pour small amount directly to the heated surface
4. Observe test sample for signs of contamination

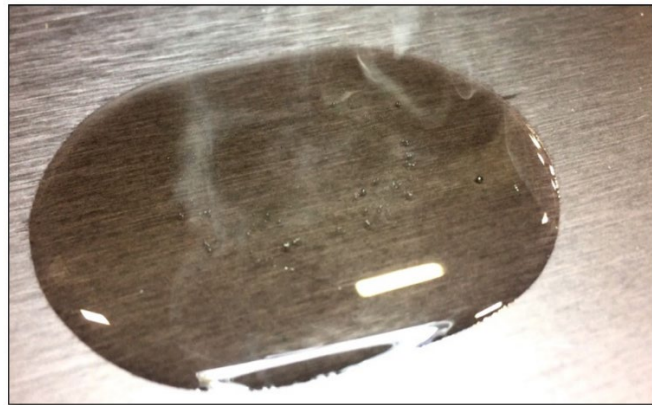
# WELLER

## Example: 50W synthetic gear oil with a limit of 2000ppm or .2%

Visible bubbles confirm water has contaminated the sample. The size and quantity of bubbles indicate the percentage or amount of contamination.



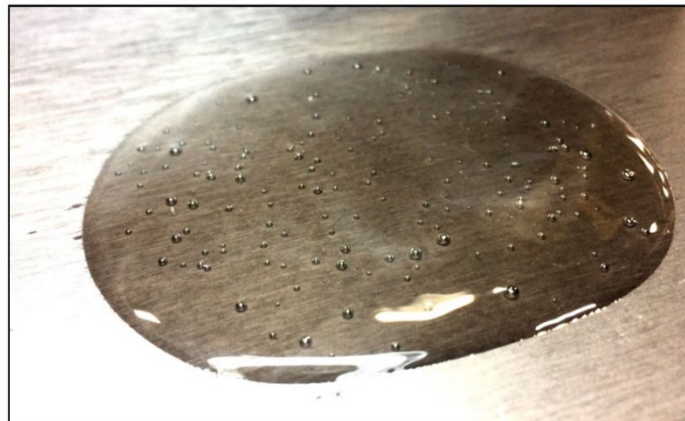
**651 PPM .065% of water**



At .065% water contamination, the oil produces very small bubbles 0.5 mm that quickly disappear.



**2310 PPM .23% of water**



At .23% water contamination, the oil produces bubbles approximately 2 mm that quickly disappear. **Oil exceeds water contamination limit of .2%**