



Special Blister Test

Objective

The test is to evaluate the corrosion resistance of ceramic non-stick coating after exposure to contact with food that contain high amount of salt.

Apparatus

- Frying pans (or similar cooking surface)
- Tomato sauce, oatmeal, salt water, rice
- pH measurement instrument
- Hot plates
- Timer

Procedure

I. The test consists of 4 cooking cycles in the following sequence:

i. **Tomato sauce**

- a. Blend with 3 liters of water a double concentrated tomato sauce can (800 g) and add 160 g of salt.
- b. Adjust the pH in range between 4 to 4.2 with HCl.
- c. Simmer the mixture in the frying pan for 2 hours.
- d. Add water if necessary to keep uniform level.
- e. Dump and wash the frying pan with hot soapy water.

ii. **Oatmeal**

- a. Boil quickly some water (900 mL) in the frying pan.
- b. Stir 450 mL of dry oatmeal and 5 g of salt into the boiling water.
- c. Boil 1 minutes, and stir it.
- d. Cover the pan, and remove from hot plate.
- e. Allow it to cool down for 5 minutes.
- f. Dump and wash the frying pan with hot soapy water.

iii. **Salt water**

- a. Boil salt water for 1 hour.
- b. Add water if necessary to keep uniform level.
- c. Dump and wash the frying pan with hot soapy water.

iv. Rice

- a.** Prepare 450 mL of rice, 450 mL of water, 5 g of salt and 20 g of margarine.
 - b.** Add salt and margarine to the boiling water.
 - c.** Pour and stir rice into the boiling mixture, then cover the frying pan.
 - d.** Remove the pan from hot plate and leave it stand for 5 minutes.
 - e.** Dump and wash the frying pan with hot soapy water.
- 2.** Fill the frying pan with a 2% detergent solution. Heat until boiling, then remove from hot plate. Cover the pan, and leave it standing for over night.
- 3.** Examine the frying pan for any blistering the next day after the detergent solution has been dumped, the pan washed, heated up to 200°C, and left to cool down to room temperature.
- 4.** Start again for the 4 cooking cycles.
- 5.** The test is conducted for usually 3 consecutive days, and the fry pan will be rated on the fourth day.

Rating

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|-----|--------------------|
| "5" | zero blister |
| "4" | <1.0 blister |
| "3" | 1.1 - 2.0 blisters |
| "2" | 2.1 - 3.0 blisters |
| "1" | 3.1 - 5.0 blisters |
| "0" | >5.1 blisters |