

ENCLOSURE 4

**GESC, NAC International, Atlanta Corporate Headquarters, 655
Engineering Drive, Norcross, Georgia (Engineering Report # NS3-020,
Effects of 1300°F on Unfilled NS-3, while Bisco Products, Inc., 11/84)**



BISCO PRODUCTS, INC.

TECHNICAL REPORT

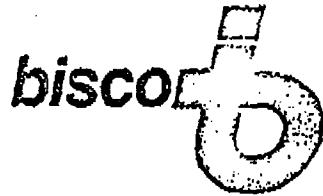
NS3-020
NO.

Effects of 1300° F on Unfilled NS-3

SIMR

DATE 11-20-84
REVISION 0

bisco products, inc.
1420 renaissance drive
park ridge, illinois 60068
one of the brand companies

ENGINEERING REPORTNumber NS3-020

bisco products, Inc.

1125 howard st.

elk grove village, illinois 60007

(312) 640-1840

Subject: Effects of 1300° F on Unfilled NS-3Date: November 20, 1984

Customer: _____

By: Malinda Mercado
Malinda Mercado
ChemistApproved By: Edwin Styring
Edwin Styring
Technical ManagerPurpose: To determine the effects of $1300 \pm 100^{\circ}$ F for one hour on unfilled NS-3.

Procedure: A sample of unfilled NS-3 was placed in a furnace at R.T. The furnace was then turned on and heated to $1300 \pm 100^{\circ}$ F (50 mins.) and then held at this temperature for one hour. At the end of one hour at $1300 \pm 100^{\circ}$ F, the oven was turned off and the unfilled NS-3 sample removed. The sample was permitted to cool to room temperature then visually examined.

This experiment was performed again on a second sample but the sample was weighed before and after exposure.

Weight Before	-	143.37 gms.
Weight After	-	84.09 gms.
Weight Loss	-	59.28 gms. 41.35%

Results:

1. It was observed that a light cloud of white smoke came from the furnace at 600° F. This cloud of light smoke continued throughout the rest of the experiment.
2. The unfilled NS-3 was a solid after the exposure to $1300 \pm 100^{\circ}$ F it did not burn.
3. The 41.35% weight loss should be composed of the organic components of NS-3 and chemically bonded hydrogen sources. The formula total of all organic and chemically bonded hydrogen components in NS-3 is 48.97%.
4. The exposed NS-3 though a solid was quite brittle and possessed very little mechanical strength.
5. It is expected that little of the original neutron shielding properties remain following the exposure to $1300 \pm 100^{\circ}$ F.