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FYI - 1097 - 1312

DuPont Films
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DuPont Films



FYI-97-001312

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October 28, 1997

Document Processing Center (TS-790)
Attn: FYI Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460



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Dear Sir/Madam:

Trifluoroethylene Vapor Containing Polymerization Inhibitor

This letter is written to inform the Agency of test results on the ignitability of air-free trifluoroethylene (CAS Reg No. 359-11-5) vapor containing polymerization inhibitor (the test substance). Results showed that under the test conditions described below, the test substance disproportionates to carbon and gas in the presence of a fused nichrome wire ignitor at 200 psig, the lowest pressure tested.

Two tests were conducted on the test substance. Testing was conducted in a 45,000 psi reactor which had been converted into a 202 cc ignition test vessel. Pressure, temperature, density, and rate of pressure values reported below are approximate, not precise, measurements.

The first test was conducted at 450 psig and 46 degrees C. Pressure rose to approximately 13,200 psi. Mean rate of pressure rise was on the order of 20,000 psi per second, with a peak measured at 83,864 psi/sec. A temperature measurement inside the heavy walled thermowell was read as 820 degrees C. This temperature could be expected to be hundreds of degrees lower than the actual explosion gas temperature. Large amounts of carbon were deposited in the test vessel.

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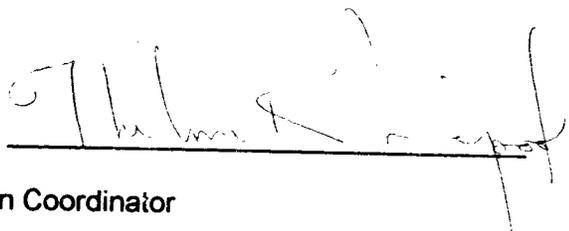
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The second test was conducted at 200 psig and 27 degrees C. Loading density was targeted for 0.06 g/cc. Pressure rose to approximately 2331 psig and temperature inside the heavy walled thermowell rose to approximately 259 degrees C. Rate of pressure rise was not obtained in this test.

DuPont does not manufacture the test substance; it is the subject of research at DuPont. This information is provided to EPA as an FYI submission.

Very truly yours,

DuPont Signature: 
Thelma Liverpool
Chemical Regulation Coordinator

TLV.cds
1:EPA

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