

TEST REPORT: 7191034331-CHM12-04-TSL

Date: 07 JUN 2012

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SUBJECT

Evaluation of Toxic Fumes Generated From Material Sample During Burning

CLIENT

Izopoli Yapi Elemanlari Taahhut Sanayi ve Ticaret A.S.
Ciragan Caddesi No 97,
34347 Ortakoy
Istanbul, Turkey

Attn : Mr Emre Erhan Karabiyik

SAMPLE SUBMISSION DATE

30 May 2012

DESCRIPTION OF SAMPLE

A packet of foam sample labelled as follows was received.

1. Brand Name / Model Name : FireSafe™
Type of Material : Isophenic foam

DATE OF ANALYSIS

01 Jun 2012 – 07 Jun 2012

METHOD OF TEST

1. Analysis of Pyrolysis and Combustion Gases Generated From the Sample

The test was conducted according to BS 6853:1999 Annex B, B.1 Mass Based Test Method – NF X 70-100 (2006) Method:

1.1 Sample Preparation of Test Specimen

The sample was conditioned at 23°C and 50% Relative Humidity for 48hours and tested as whole for the following tests.



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METHOD OF TEST (Cont'd)

1.2 Generation of Pyrolysis and Combustion Gases

Approximately 0.5 g of the sample was then used for the test in a stream of air at the air flow rate of 120L/hr at 600°C for 20minutes in a tube furnace. A further 20minutes was used to air-flush the apparatus once residue sample was removed from tube furnace.

Toxic fumes collected during the burning were analysed by the following methods:

- a) Carbon Monoxide and Carbon Dioxide : Directly determined by Horiba Automotive Emission Analyzer
- b) Hydrogen Cyanide : By Pyridine – Pyrazalone Method
- c) Others ions : By Ion Chromatography

RESULTS:

Table 1: The Toxic Fumes Results For “Firesafe™ Isophenic Foam” Sample

Toxic Fumes Generated	“Firesafe™ Isophenic Foam” (mg/m ³ of Fire Effluents)	IDLH Values Limits ^a (mg/m ³)
1. Carbon Dioxide, Average (Carbon Dioxide, maximum)	<200 <200	73000 -
2. Carbon Monoxide, Average (Carbon Monoxide, maximum)	<200 <200	1400 -
3. Hydrogen Fluoride, HF	<5	25
4. Hydrogen Chloride, HCl	<5	76
5. Hydrogen Bromide, HBr	<5	101
6. Sulfur Dioxide, SO ₂ ^b	<5	270
7. Nitrogen Dioxide, NO ₂ ^c	<5	38
8. Hydrogen Cyanide, HCN	<5	56

^a The values in Table 1 are the IDLH values of the listed gases (the concentration of the gas in the atmosphere which for an exposure time of 30mins is immediately Dangerous to Life or Health) given in the NIOSH Guide [1].

^b Sulfur Dioxide includes Sulfur trioxide expressed as sulfur dioxide

^c Nitrogen dioxide includes nitric oxide expressed as nitrogen dioxide



RESULTS (Cont'd)

1. The above results from the analysis of the toxic fumes generated from the specimen were found to be below the IDLH Value of listed gases.
2. The weighted summation index, R, is less than 0.3.

Remarks

The weighted summation index R for the sample tested was found to be within the requirement of 1.0 max when tested and assessed according to NF X 70-100 with R calculated in accordance with Annex B of BS 6853:1999.



Handwritten signature of MS TAN SER LING.

MS TAN SER LING
TECHNICAL EXECUTIVE

Handwritten signature of DR LI SIHAI.

for **DR LI SIHAI**
AVP / SENIOR CHEMIST
MICROCONTAMINATION DIAGNOSIS
CHEMICAL & MATERIALS

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July 2011

