

TEST REPORT: 719177397-CHM10-TSL

Date: 10 JUN 2010

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SUBJECT

Evaluation of Toxic Fumes Generated From Material Sample During Burning

CLIENT

LHT Holdings Ltd
27 Sungei Kadut St 1
Singapore 729335

Attn : Mr Billy Neo

SAMPLE SUBMISSION DATE

25 May 2010

DESCRIPTION OF SAMPLE

A few pieces of wood material sample labeled as follows were received. The test was confirmed to be analysed on 31 May 2010.

1. Technical Wood

DATE OF ANALYSIS

31 May 2010 – 10 Jun 2010

METHOD OF TEST

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

According to NF X 70-100(1986) Method:

Fire Tests – Analysis of Pyrolysis and Combustion Gases – Tube Furnace Method as reference.

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.

1.2 Generation of Pyrolysis and Combustion Gases

Approximately 1.0 g of the sample was then used for the test in a stream of air at the air flow rate of 120L/hr at 800°C for 20minutes in a tube furnace.



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METHOD OF TEST (Cont'd)

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 “Technical Wood” Sample

Toxic Fumes Generated	“Technical Wood” (mg/m ³ of Fire Effluents)	IDLH Values Limits ^a (mg/m ³)
1. Carbon Dioxide, Average (Carbon Dioxide, maximum)	<200 358	73 000 -
2. Carbon Monoxide, Average (Carbon Monoxide, maximum)	<200 <200	1 400 -
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

- 1. The above analytical toxic fume results generated from the sample were below the IDLH Value 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) in the NIOSH Guide.

MS TAN SER LING
TECHNICAL EXECUTIVE

DR ZHANG YI
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March 2010