

Tested For: Rebecca Johnson
 3M Company
 3M Center Bldg 230-BE-16
 Maplewood, MN 55144
 USA

Phone: (651) 282-4485
Fax:
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Received: 1/26/2021
Completed: 2/25/2021
Code: A
Test Report: 3-42295-0

Key Test: BSS 7239 Gas Toxicity

1838

Client's Identification:

Lot No.: LA-D100-2874-7. Style: DP8610NS. Composition: 2K Acrylic Adhesive. Product End Use: Rail Applications for Structural Adhesive. [Adhesive sandwich between 2 pieces of IRC cement board]. Adhesive thickness: 0.01".

Category: Gas Toxicity Specifier: Boeing LE 1988; V 01/19 PC: 24H /dl

TEST PERFORMED: Boeing Test Method BSS 7239 Rev-A - Analysis of the products of combustion using the NBS smoke chamber and gas detector tubes to determine presence of specific products of combustion

APPROXIMATE THICKNESS OF MATERIAL (as measured by SGS North America): 0.554 inches

APPROXIMATE WEIGHT OF SPECIMEN (as weighed by SGS North America): 99.89 grams

BRIEF DESCRIPTION OF TEST: The basic procedure is described by BSS 7238 - Boeing Specification Support Standard, Test Method for Smoke Generation by Materials on Combustion

Two separate tests are conducted on multiple specimens. In one test the face of each specimen is exposed to a radiant heat source of 2.5 W/cm² (non flaming mode). In a second test completely new specimens are subjected to both the radiant heat source and 6 small igniting flames (flaming mode).

Analytical techniques are gas specific and as follows:

I. Hydrogen Cyanide and Hydrogen Chloride: Four minutes after the start of the test the combustion product is collected in a gas detector tube, used in combination with a Draeger "Accuro" Gas Extraction Pump, Model 6400000. As the combustion product is drawn through the detector tube, a reagent inside the tube stains and indicates the concentration of a specific gas produced during combustion.

II. Carbon Monoxide, Sulphur Dioxide and Nitrous Oxide(s): At the four-minute mark, the amounts (ppm) of these non-reactive gases are determined using a Testo 350 Flue Gas Analyzer taking values at least once per second. When values have stabilized, the data is recorded.

III. Hydrogen Fluoride: Hydrogen Fluoride is assessed using Potentiometry. At the four minute mark, 1000 ml of the chamber gases are drawn at a maximum rate of 200 ml per minute into an impinger bottle containing the absorption solution. The contents of the impinger bottle are then transferred to a measuring flask and renormalized to 100ml with distilled water and an Ionic Strength Adjuster (ISA). Concentrations are read by instrumentation. Values are recorded.

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RESULTS and ACCEPTANCE CRITERIA:

		<u>Flaming Mode at 4 Minutes</u>			<u>Suggested Maximum Limits at 4 Minutes</u>
<u>Combustion By Product</u>		<u>Specimen 1 (ppm)</u>	<u>Specimen 2 (ppm)</u>	<u>Average (ppm)</u>	<u>(ppm)</u>
CO	Carbon Monoxide	3.0	4.0	3.5	3500
HF	Hydrogen Fluoride	LT 2.0	LT 2.0	LT 2.0	200
HCl	Hydrogen Chloride	LT 1.0	LT 1.0	LT 1.0	500
HCN	Hydrogen Cyanide	LT 0.5	LT 0.5	LT 0.5	150
SO ₂	Sulphur Dioxide	1.0	1.0	1.0	100
NO, NO ₂	Nitrous Gases	0.2	0.3	0.3	100

CONCLUSION #1 (FLAMING MODE): The above results for specimens tested in the Flaming Mode:

- Do not exceed the Suggested Maximum Limits
- Exceed the Suggested Maximum Limits

		<u>Non-Flaming Mode at 4 Minutes</u>			<u>Suggested Maximum Limits at 4 Minutes</u>
<u>Combustion By Product</u>		<u>Specimen 1 (ppm)</u>	<u>Specimen 2 (ppm)</u>	<u>Average (ppm)</u>	<u>(ppm)</u>
CO	Carbon Monoxide	0.0	0.0	0.0	3500
HF	Hydrogen Fluoride	LT 2.0	LT 2.0	LT 2.0	200
HCl	Hydrogen Chloride	LT 1.0	LT 1.0	LT 1.0	500
HCN	Hydrogen Cyanide	LT 0.5	LT 0.5	LT 0.5	150
SO ₂	Sulphur Dioxide	1.0	1.0	1.0	100
NO, NO ₂	Nitrous Gases	0.2	0.2	0.2	100

CONCLUSION #2 (NON-FLAMING MODE): The above results for specimens tested in the Non-Flaming Mode:

- Do not exceed the Suggested Maximum Limits
- Exceed the Suggested Maximum Limits

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ABBREVIATIONS WHICH MAY BE USED:

M = Minimum detectable concentration
 LT = Less Than

REMARKS: None.

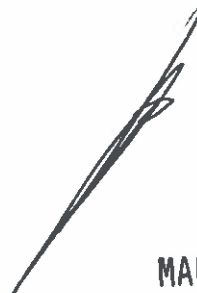
CERTIFICATION: I certify that the above results were obtained after testing specimens in accordance with the procedures and equipment specified above.

AUTHORIZED SIGNATURE
 SGS NORTH AMERICA
 /jab /gb



Bobby Brown

Test Technician: Ajaz Mehdi



MAR 19 2021

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