



PT. Sumatera Prima Fibreboard

FLAME RETARDANT

Medium Density Fibreboard

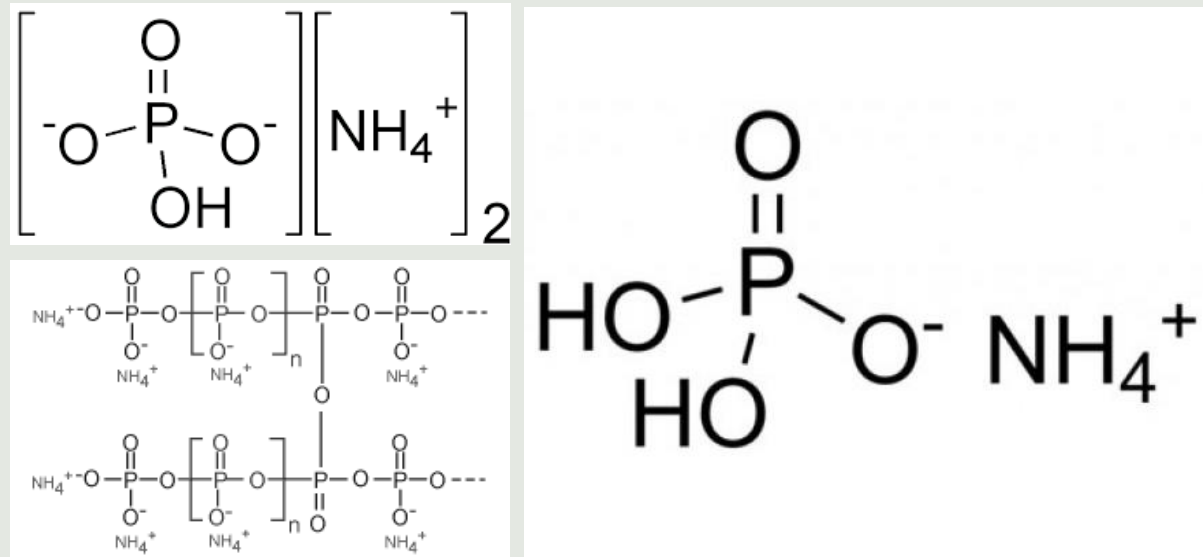


Flame Retardant

A flame retardant is a substance or compound used to inhibit, slow down, or prevent the spread of fire on certain materials, such as wood..
The chemical mixed in it is Siriono 6000.

SIRIONO 6000

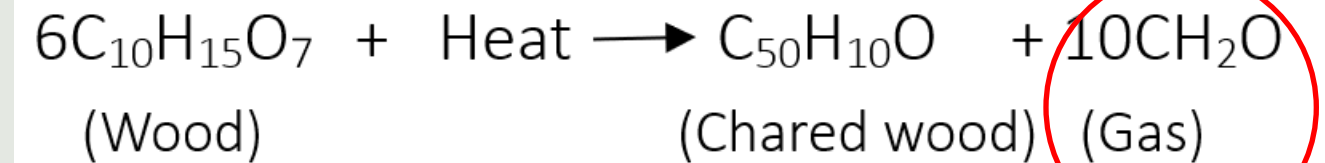
Flame retardant chemical - Siriono 6000 is a mixture of mono- and poly-ammonium phosphate in water.
(they have a good environmental and health profile)



What causes fire to appear?



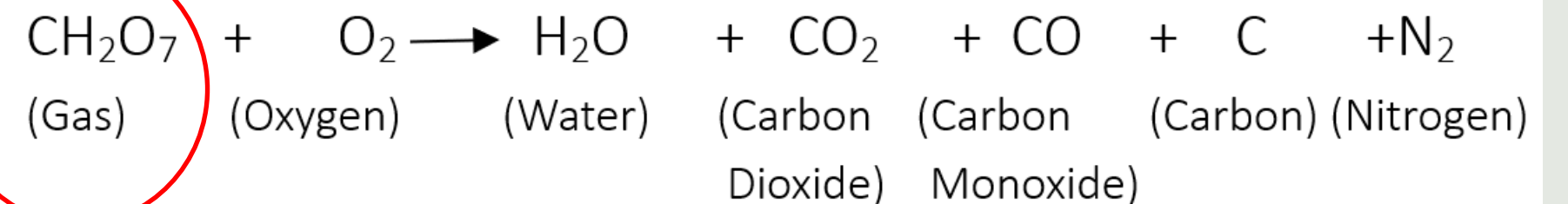
Heated wood releases gases :



Reduce Formaldehyde Gas from heated fuel

Gases react with oxygen in atmosphere :

Formaldehyde Gas



FLAME RETARDANT

Testing Result (GB/T)

GB 8624-2012 table 2 - classification:

| Classification | | Test method | Classification criteria |
|----------------|---|-----------------------------|--|
| B1 | B | GB/T 20284 and | FIGRA _{0.2MJ} ≤ 120W/S; LFS < edge of specimen, THR ₆₀₀ ≤ 7.5 MJ |
| | | GB/T 8626 Exposure = 30s | F _s ≤ 150mm within 60s No ignition of the paper within 60s |
| | C | GB/T 20284 and | FIGRA _{0.4MJ} ≤ 250W/S; LFS < edge of specimen, THR ₆₀₀ ≤ 15 MJ |
| | | GB/T 8626 Exposure = 30s | F _s ≤ 150mm within 60s No ignition of the paper within 60s |

| Addition test | Smoke | s1 | SMOGRAS ≤ 30 m ² /s ² , TSP ₆₀₀ ≤ 50m ² |
|---------------|-----------------------|----|---|
| | | s2 | SMOGRAS ≤ 180 m ² /s ² , TSP ₆₀₀ ≤ 200m ² |
| | | s3 | Not reached S1 or S2 |
| | Particles or droplets | d0 | No flaming particles or droplets within 600s |
| | | d1 | Flaming particles or droplets within 600s, duration of time not exceed 10s |
| | | d2 | Not reached d0 or d1 |


Conclusion:

| Test standard | Record | Conclusion |
|---------------|--|-------------|
| GB/T 20284 | FIGRA _{0.2MJ} = 48.6 W/S LFS < Sample edge THR _{600s} = 4.3 MJ SMOGRAS = 0 m ² /s ² TSP ₆₀₀ = 22.5 m ² No flaming particles or droplets within 600s | B1(B-s1,d0) |
| GB/T 8626 | F _s ≤ 150mm within 60s No ignition of the paper within 60s | |

Applicant: PT. Sumatera Prima Fibreboard

Applicant address: Palembang-Indonesia

Description of the test subject:

| Sample | Description | Photo |
|--------|--|--|
| 001 | Sample Description: MDF (Medium Density Fibreboard) Product Thickness: 18mm |  |

FLAME RETARDANT

Testing Result

(GB/T 20284-2006 & GB/T 8626-2007)

Test Data:

Certificate ID code: TC.20.01.000212, Customer ID code: 2144


| Test Items | Test results | Requirements of Class B1(B-s1,d0) |
|-----------------|---|--|
| GB/T 20284-2006 | FIGRA _{0.2MJ} =48.6 W/s THR _{600s} =4.3 MJ LFS<the edge of specimen SMOGRA=0 m ² /s ² TSP _{600s} = 22.5 m ² No flaming particles or droplets within 600s | FIGRA _{0.2MJ} ≤120 W/s THR _{600s} ≤7.5 MJ LFS< the edge of specimen s1: SMOGRA≤30 m ² /s ² TSP _{600s} ≤ 50 m ² d0: No flaming particles or droplets within 600s |
| GB/T 8626-2007 | F _s <150mm within 60s No ignition of the paper within 60s | F _s <150mm within 60s No ignition of the paper within 60s |

Conclusion: the above results indicate to comply with the requirements of GB 8624-2012 Class B1(B-s1, d0).

Applicant: PT. Sumatera Prima Fibreboard

Applicant address: Palembang-Indonesia

Description of the test subject:

| Sample | Description | Photo |
|--------|--|--|
| 001 | Sample Description: MDF (Medium Density Fibreboard) Product Thickness: 18mm |  |

FLAME RETARDANT

Testing Method (BS 476 : PART 7: 1997)

- BS 476:part 7:1997 Method for classification of the **surface spread** of flame of products

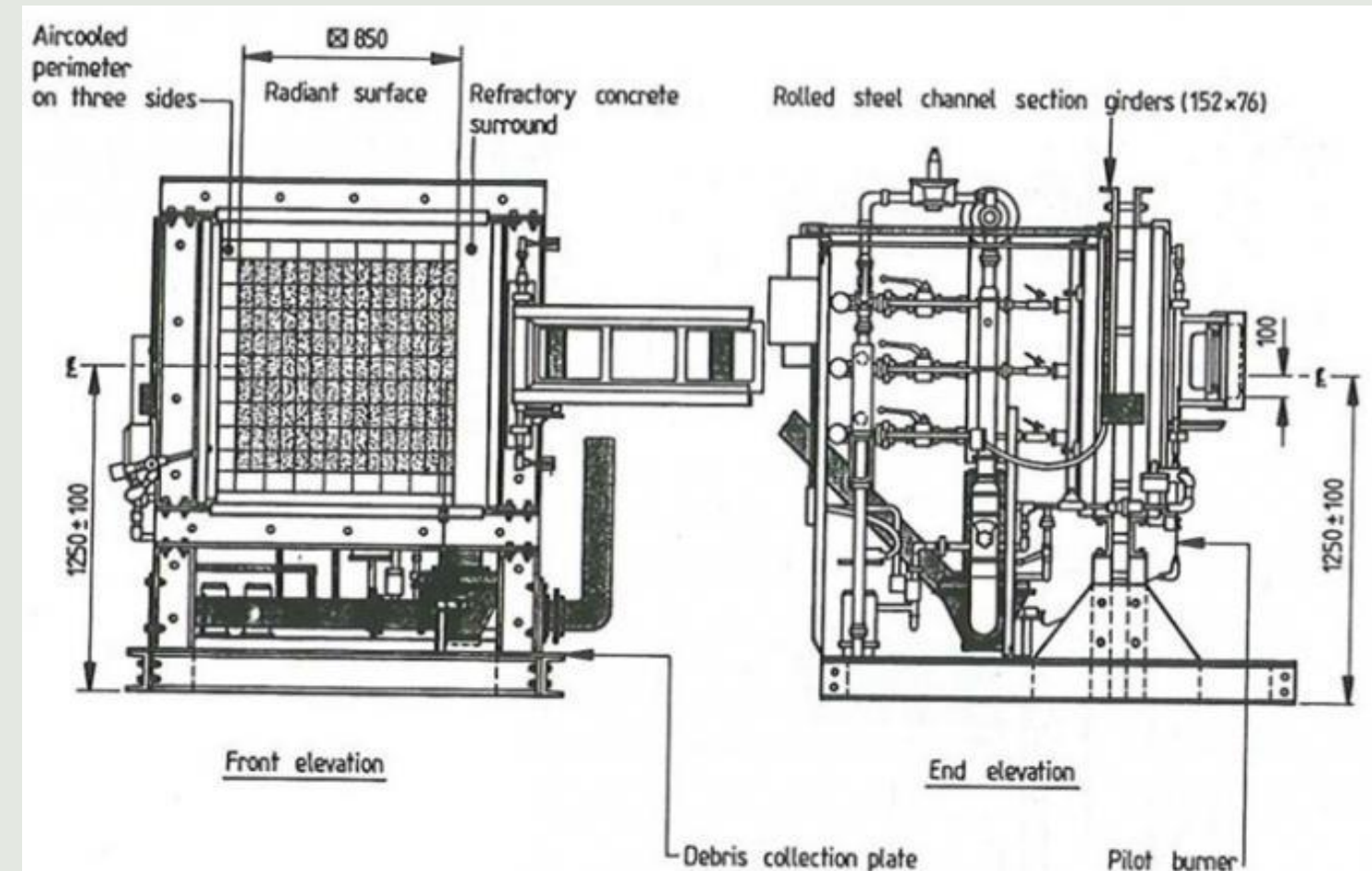
Scope of test

BS 476: Part 7: 1997 specifies a method of test for measuring the lateral spread of flame along the surface of a specimen of a product orientated in the vertical position, and a classification system based on the rate and extent of flame spread. It provides data suitable for comparing the performances of essentially flat materials, composites, or assemblies, which are used primarily as the exposed surfaces of walls or ceilings.

Appendix 2 – Classification Criteria

Classification of spread of flame

| Classification | Spread of Flame at 1.5 min | | Final Spread of Flame | |
|----------------|----------------------------------|-----------------------------|-----------------------|-----------------------------|
| | Limit (mm) | Limit for one specimen (mm) | Limit (mm) | Limit for one specimen (mm) |
| Class 1 | 165 | 165 + 25 | 165 | 165 + 25 |
| Class 2 | 215 | 215 + 25 | 455 | 455 + 45 |
| Class 3 | 265 | 265 + 25 | 710 | 710 + 75 |
| Class 4 | Exceeding the limits for class 3 | | | |



FLAME RETARDANT

Testing Result (BS 476: PART 7: 1997)

Appendix 1 – Test Results

| SPECIMEN No. | 1 | 2 | 3 | 4 | 5 | 6 |
|--|----|----|----|----|----|----|
| Maximum distance travelled at 1.5 minutes (mm) | 80 | 75 | 80 | 80 | 80 | 75 |

Executive Summary

Objective To determine the surface spread of flame classification of the following product when tested in accordance with BS 476: Part 7: 1997.

| Generic Description | Product reference | Thickness | Density |
|--|--|-----------|----------------------|
| Flame retardant grade medium density fibreboard | "PT. Sumatera Prima Fibreboard FR MDF" | 18mm | 780kg/m ³ |
| Please see page 5 of this test report for the full description of the product tested | | | |

Test Sponsor Panel Plus Co., Ltd., 25th Floor, Ploenchit Center Building, 2 Sukhumvit Soi 2 Klongtoey, Bangkok 10110, Thailand

Test Results: **Class 1**

Classification In accordance with the class definitions given in BS 476: Part 7: 1997; the specimens tested are classified as Class 1.



FIRE TEST IN HOUSE

NORMAL MDF

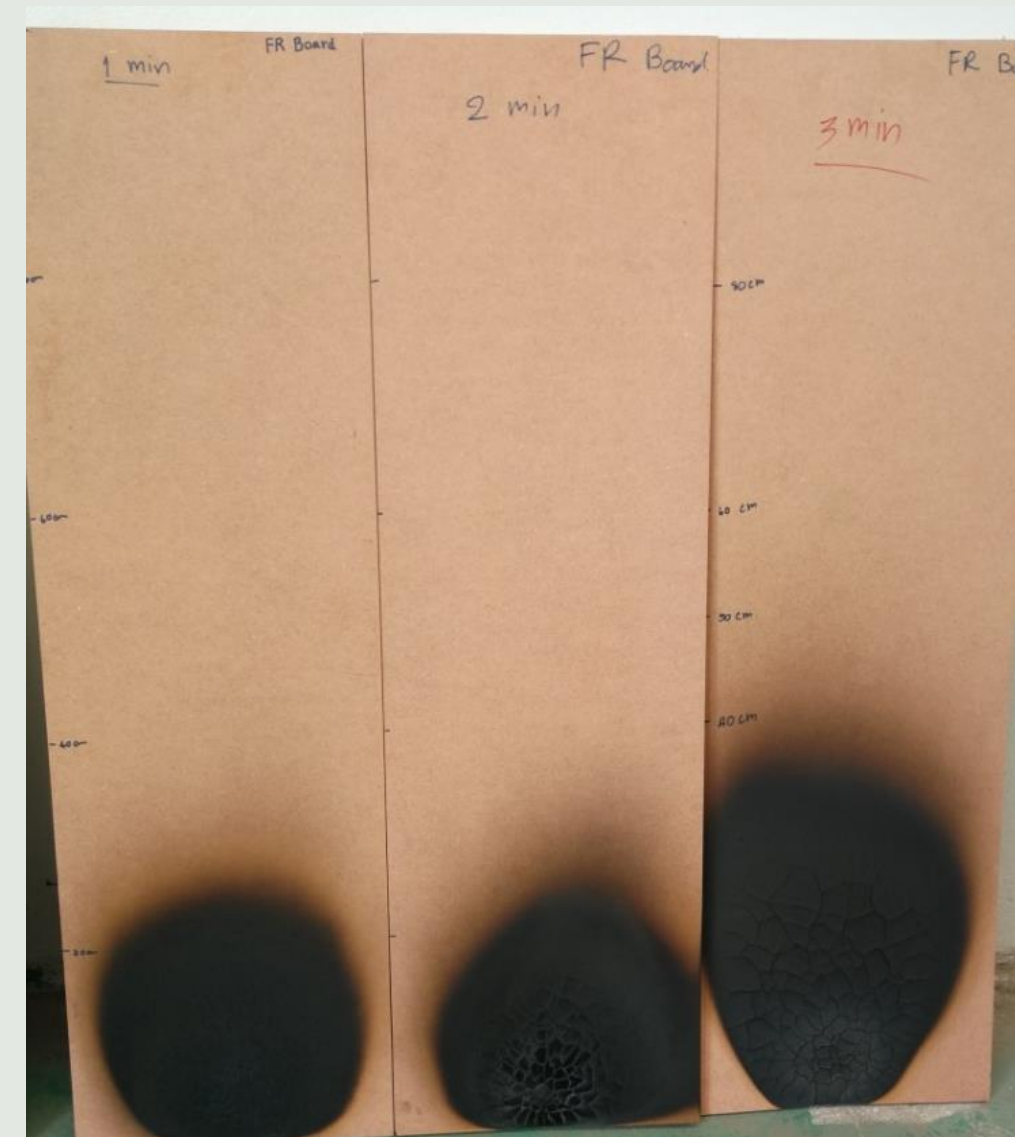


1 min

2 min

3 min

FLAME RETARDANT MDF



1 min

2 min

3 min