

# HARTINDO AF21

## FIRE INHIBITOR

### PROTECTS BUILDINGS FROM FIRE

**HARTINDO AF21** is a colourless water liquid, non toxic, non corrosive and friendly to the environment.  
Applied to protect your family, your properties and your peace of mind.



**USED IN :**  
Aircrafts, hotels, office,  
cinemas, nightclubs,  
houses, cars/buses,  
trains, hospitals,  
restaurants etc.

Easily applied on or off  
site without disrupting  
daily schedules.

### APPLICATION

Application can be done on site by spraying, dipping or padding.  
Dense material such as hardwood can be treated by vacuum  
pressure.

1 Litre of AF21 solution can treat 8-10 square metres depending  
on the thickness of material.

The best method of application is in two stages.  
First a light spray is applied and left for 5 minutes when a second,  
heavier spray should be applied.

For industrial use application can be done at the manufacturing  
stage.



### NOTES ON PREPARATION FOR TREATMENT

**MEASUREMENTS** : Measure accurately and convert to square metres. In the case of curtains, measure with all pleats flattened, and remember that linings will also require treatment.

**COLOURFASTNESS** : Pre test any suspect fabric for dye run by wetting with the solution and rubbing it against a clean white piece of fabric or paper towel/tissue.

**FLAMMABILITY** : Small pieces of hem/selvage or pieces of waste material should be tested for effective treatment prior to treating the whole item. Hold the treated sample with tweezers and apply flame to test.

**CLEAN UP** : Any over spray should be removed with a damp cloth. Rinse application equipment in warm water.

**HANDLING AND STORAGE** : Hartindo AF21 presents no usual hazards, but all usual industrial handling precautions should be observed. In case of skin/eye contact, rinse with water. Store in air tight containers and agitate before use.

**HARTINDO AF21 meets BRITISH STANDARDS ( meets Civil Aviation Authority Standards ),  
US REGULATIONS ( meets Federal Aviation Authority Standards), SISIR (Singapore) and SIRIM (Malaysia)**



## FIRE

Dangerous, destructive fire spreads rapidly from a relatively small ignition source, creeping and later leaping across curtains, carpets, furnishings and wall coverings. HARTINDO AF21 prevents that spread of flame confining the fire to the ignition source which can be readily extinguished, or goes out by itself.

### HARTINDO AF21 provides :

1. Reduction in the ease of ignition of fire
2. Reduction of flame propagation and combustion
3. Elimination and prevention of AFTERGLOW

## THE NEED FOR HARTINDO AF21

In any one year, millions of Dollars are lost through fire and thousands of people are killed or seriously injured as a result.

Most fires start small, they often spread rapidly onto surrounding flammable surfaces and before long the phenomenon of flash over occurs, where superheated gases cause a whole room to erupt into flame within seconds.



## ITEMS FOR TREATMENT

These includes curtains, carpet, rugs, upholstery fabrics, corks, mattress, dried flowers, various porous wall coverings, exposed wood surface not having a decorative surface finish, partitions etc, etc.

Treated materials will not burn or support flame, and the flames from untreated materials will self extinguish when they reach the treated and protected area.

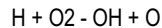
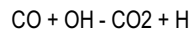
## AF21 TREATED MATERIAL WHEN SUBJECTED TO FIRE

All materials will CHAR when subjected to high heat, but AF21 protected material will not flame, burn or spread flame. Plastic content products are the main carriers of fire. In addition to the TOXIC FUMES they produce, they burn and melt dropping flaming droplets carrying the fire to everything else in the room. AF21 treated plastic will only MELT not flame, the release of toxic fumes are diminished and dripping and fire spread will not be possible.



## HOW HARTINDO AF21 WORKS

In general the combustion process may be presented by these formula :



Hartindo AF21 BREAKS the chain reaction by chemical means which has proved to be the most effective way to control fire in the solid state with natural substances, and in the vapour state with synthetics.

Hartindo AF21 formulation copes with both situations in one treatment.

## LIMITATION OF HARTINDO AF21

Apart of being colourless, the AF21 causes no colour change, shrinkage or stiffness on the treated material. Treatment will stay on the materials for the life of the material itself. AF21 will resist dry clean up to 10 times. HOWEVER, prolong exposure to very moist conditions or immersions in water will tend to reduce the effectiveness.



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# HARTINDO AF21

## Introduction

**NEW** 

# HARTINDO AF21

### AF21 is a Fire Inhibitor

Unlike the existing Fire Retardant which only delays the start of fire, AF21 totally inhibit the growth of fire makes the fire unable to start in the first place.

- ⇒ AF21 is designed to protect properties from fire day and night, even from arson attack.
- ⇒ AF21 is environment friendly, it is biodegradable, non toxic, non corrosive and non irritant to skin. These criteria's are as demanded by our modern society internationally.
- ⇒ AF21 meets the stringent test like British Standards, FA (USA), SISIR (Singapore) and SIRIM (Malaysia).
- ⇒ AF21 withstands soak test, dry clean test and proudly stands as the only water based chemical to protect polypropylene based carpet.



# HARTINDO AF21

## Introduction



### THE PRODUCT

THE FIRE INHIBITOR IS A CLEAR, WATER BASED FORMULATION, MOST EASILY APPLIED TO ANY ABSORBENT SURFACE BY SPRAYING, PADDING, FOGGING, DIPPING OR BRUSHING EITHER ON SITE, IN HOUSE OR ON THE FACTORY PRODUCTION LINE.

THE APPLICATION OF THIS CAREFULLY PREPARED SOLUTION, RESULTS IN A INVISIBLE PROTECTIVE IMPREGNATION WHICH WILL INHIBIT COMBUSTION, AND REDUCE THE POSSIBILITY OF FLAME SPREAD, IT WILL ALSO ELIMINATE AFTERGLOW.

ONCE THE TREATMENT IS COMPLETED, THE TREATED MATERIALS SHOULD NOT BURN WHEN A NAKED FLAME IS APPLIED, AND NOT CONTINUE TO BURN WHEN THE FLAME IS REMOVED. IT SHOULD EVEN WITHSTAND THE FLAME FROM A BLOW TORCH. NATURAL FIBRES WILL CARBONISE, SYNTHETIC FIBRES AND MIXTURES MAY MELT, BUT ANY FALLING DROPS WILL NOT FLAME OR SPREAD FLAME.

### THE ADVANTAGES

1. Can be used to protect natural and most synthetic fibers, saving the need to define various types of substrate to be treated.
2. Does not require "Curing" and will dry naturally on site.
3. Is completely non toxic and non corrosive, tested for oral toxicity, dermal (skin irritation) LD50, and eye irritation.
4. Will not change, alter or affect the appearance, feel or texture of the treated fabric or substrate.
5. Will withstand many dry cleanings without reducing the protection.
6. There should be substantial reduction of toxic fumes, and the treated area should act as an insulating barrier, so no high temperature should take place behind it.



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**NEW** 

### APPLICATION

The chemical action of the media in the presence of heat or flame, results in a carbon coating which acts as an insulator, and release of gas free radicals propagation, inhibits combustion and acts as an insulator, inhibiting the release of combustion gases and toxic fumes.

**It can be used as a fire inhibitor to flameproof the following :**

SOFT TOYS	LINEN	COTTON BASES
CANVAS	TENTS	AWNINGS
CEILING TILES	SUNBLINDS	UPHOLSTERY
MARQUEES	RUGS	LEATHER
CURTAIN/DRAPE	CARDBOARD	DECORATION
WALL COVERINGS	DRIED GRASS	FARM PRODUCE
UNFINISHED WOOD	BARN	COW SHEDS
STABLES	ART TREASURES	PAINTINGS
CHICKEN HOUSE	BUSES	AUTOMOBILES
COTTON	CORK	BOATS
INTERIOR FURNISHING OF AIRCRAFT		
PROTECTIVE CLOTHING		
DRIED AND ARTIFICIAL FLOWERS		

THE MANY TEST CERTIFICATES INCLUDING FAA (FEDERAL AVIATION ADMINISTRATION, USA) APPROVAL FOR USE IN AIRCRAFT WILL SATISFY FIRE OFFICERS.



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