

Your safety, Our concern...



An strategic solution to fire protection



**KNV'S**  
INCORPORATION



## What is fire retardant ?

A **fire retardant** is a substance other than water that reduces flammability of fuels or delays their combustion. This typically refers to chemical retardants but may also include substances that work by physical action, such as cooling the fuels; examples of these include fire-fighting foam and fire-retardant gels. The name fire retardant may also be applied to substances used to coat an object, such as a spray retardant to prevent Christmas trees from burning. Fire retardants are commonly used in fire fighting.

Home fires damage about 400,000 homes, and cause just under 7 billion US dollars in direct damage annually in the United States. Because of the importance of prevention, fire retardation has become a very notable industry.

## How retardants work

In general, fire retardants reduce the flammability of materials by either blocking the fire physically or by initiating a chemical reaction that stops the fire.

### Physical

There are several ways in which the combustion process can be retarded by physical action:

- By cooling: Some chemical reactions actually cool the material down.
- By forming a protective layer that prevents the underlying material from igniting.
- By dilution: Some retardants release water and/or carbon dioxide while burning. This may dilute the radicals in the flame enough for it to go out.

### Chemical action

- Reactions in the gas phase: chemical reactions in the flame (i.e. gas phase) can be interrupted by fire retardants. Generally, these retardants are organic halides (haloalkanes) such as Halon and PhostrEx. However, there are situations where the released gas might be more dangerous when this type of retardant is involved.
- Reaction in the solid phase: some retardants break down polymers so they melt and flow away from the flame. Although this allows some materials to pass certain flammability tests, there is argument over if the fire safety is truly improved by the production of flammable plastic droplets.
- Char Formation: For carbon-based fuels, solid phase flame retardants cause a layer of carbonaceous char to form on the fuel surface. This char layer is much harder to burn and prevents further burning.[11][12]
- Intumescent: These types of retardant materials add chemicals which cause swelling up behind the protective char layer, providing much better insulation behind the protective barrier. In addition to being added to plastics, these are available as paints for protecting wooden buildings or steel structures.



**FRX-06**  
FLAME RETARDANT

Safe–non–toxic–non-hazardous

Retards fire by limiting flame spread

Easy to use-brush, roll or spray

FRX-06 is a clear, water based, ready to use flame retardant. FRX-06 may be applied to any bare wood or natural textile product to provide flame spread control and suppress smoke generation in the event of fire.

## WHERE FRX-06 CAN BE USED ?

FRX-06 provides effective interior and exterior flame control to bare wood surfaces such as joints, beams, wall boards and shingles, either on hard or soft woods.

FRX-06 also provides interior protection for carpets, drapes, coverings, decorations and upholstery.

## WILL FRX-06 HARM HUMAN OR ANIMALS ?

Not at all FRX-06 is a non-toxic, non hazardous liquid, and remains equally safe once applied. Clean up is as simple as rinsing any splashed surfaces with clear water.

## DIRECTIONS

### FABRIC:

Because of the multiplicity of synthetic fabrics, each material should be tested for compatibility to FRX-06 FLAME RETARDANT before application. A small piece of material to be treated should be sprayed with FRX-06 giving it two coats for best penetration. Dry thoroughly. Drying time varies according to temperature and humidity. Any shrinking, texture or appearances changes should be noted on the treated sample. Treating of material should proceed as outlined above for sample.

[COVERAGE: 40 square feet per liter fabric]

### WOOD:

Spray, dip, roll or brush on unfinished wood or other wood products. Two applications will give best coverage. Dry thoroughly before application of other finishes.

[COVERAGE: 55 square feet per liter on wood]



Curtains & Decorative Art Pieces



Wall & Roof Paneling



Carpets & Uphostry

## USES IN CONSTRUCTION

- ▢ Government Offices
- ▢ Nuclear Power Plants
- ▢ Hospitals / Hotels
- ▢ Schools / Daycare Centers
- ▢ Libraries / Houses
- ▢ Multistory Building
- ▢ Office Interiors

## USES IN EXISTING STRUCTURES

- ▢ Roofs / Rafters
- ▢ Wallboards / Paneling
- ▢ Draperies / Curtains
- ▢ Carpets / Mats
- ▢ Upholstery / Bedding
- ▢ Decorative Items

## ITEMS TO BE TREATED

- ▢ Wood / Wood Products
- ▢ Paper / Currency
- ▢ Bamboo / Cane Products
- ▢ Cotton Jute
- ▢ Statements
- ▢ Important Documents

**[FRX-06 PASSES ALL CRITICAL INTERNATIONAL FIRE TEST STANDARDS AND MSDS IS ON REQUEST]**

FRX-24 Flame Retardant Industrial is a substance that can be chemically inserted into the polymer molecule or be physically blended in polymers after polymerization to suppress, reduce, delay or modify the propagation of a flame through a plastic material."

### WHERE FRX-24 CAN BE USED ?

FRX-24 is mainly used as flame retardants in many plastics and resins for the application of manufacturing electrical and automobile parts. They are used as flame retarding plasticizers or additives in cellulose, polyester and polyurethane. They are also used as a plasticizer in vinyl automotive upholstery and in cellulose acetate articles.

### PRODUCT SPECIFICATION

Appearance	: Clear Oily Liquid.
Color	: Light Pale Yellow.
Acidity Content	: 0.05 max mg.
Specific Gravity	: 1.208 +/- 0.005 At 25oC
Refractive Index	: 1.560 +/- 0.01 at 25'C
Proprietary blend Content	: > 96.8 %

### INSTRUCTION FOR ADDITION

Rubber, plastic, paint, FRP and flexible PU Foams which has to be made Flame Retardant with uses of FRX-24 at the concentration of 10 - 12 phr.



Plastic & Rubber Industry



Plastic & Rubber Industry

**[ FRX-24 PASSES ALL CRITICAL INTERNATIONAL FIRE TEST STANDARDS AND MSDS IS ON REQUEST ]**



### KNV'S INCORPORATION

102, Suryakiran Commercial Complex, Bajaj Nagar, Opp. VNIT Gate, Nagpur – 440 010, M.S., India.

Tel: +91-712-319 6333 / 319 9333 Marketing Enquiry: +91-98230 24642 Admin Enquiry: +91-93263 69333

E-mail: info@knvindia.com