

GREEN FLAME

Retardants for fire safety

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THE PROBLEM

13 %

rise of global fires
since 2019

3,500

killed annually
in Europe since 2019

70 000

at least injured
in Europe since 2019

\$ 76 billion

Global financial
losses 12 % GDP



TOXICITY

Halogenated flame retardants
(FR) **accumulate in
human bodies and nature.**



STANDARDS

Halogenated FR face **restrictions
by REACH , RoHS , POPs
and other directives**



APPLICATIONS

Halogenated FR are **not
applicable** to all polymers and
porous materials.

Treated materials **lose strength
and quality.**

OUR SOLUTION

**WIDE RANGE
OF POLYMERS**

Hydrophobic
and hydrophilic

Any physical and
chemical properties
and structure

High efficiency
to retard
flammability



**ABSORPTION
IN FEW SECONDS**

Hydrophobic
and hydrophilic

High efficiency
to retard
flammability

GREEN SOLUTION



OUR COMPETITIVE ADVANTAGES

Applicable for **liquid extinguishers, sprinklers and to combat wild fires**

Non toxic and biodegradable in nature/ landfills

Patent protected in USA and EU

Fire protection of porous polymeric materials

DIY kits for home application

Certified product



GREEN FLAME

Retardants for fire safety



Textile



Furniture



Leather



Wadding



Paper & Cardboard



Wooden Houses



Polystyrene



Polyurethanes



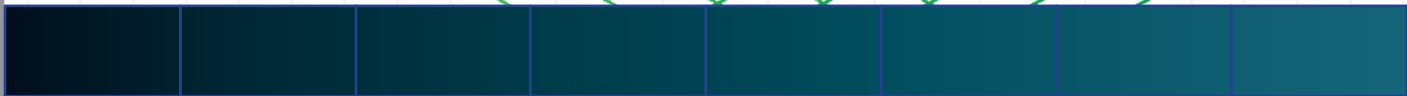
Sprinklers



Wild Fires

OUR APPLICATIONS

COMPETITIVE ADVANTAGES APPLICATIONS



Application



Textile



Furniture



Leather



Wadding



Wooden
Houses



Paper &
Cardboard



Polystyrene



Polyurethanes



Sprinklers



Wild Fires

FLAME RETARDANT IMPREGNATION TECHNOLOGIES

Techniques



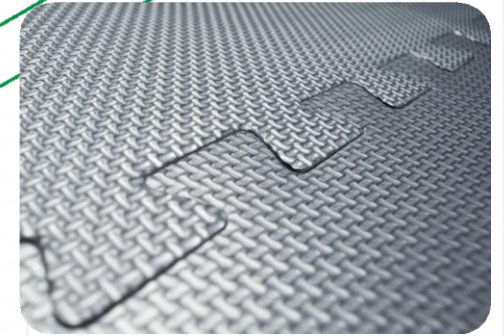
Soak



Brush



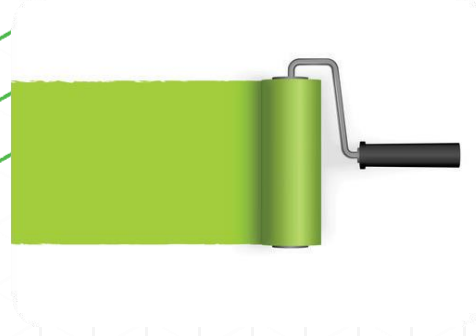
Spray



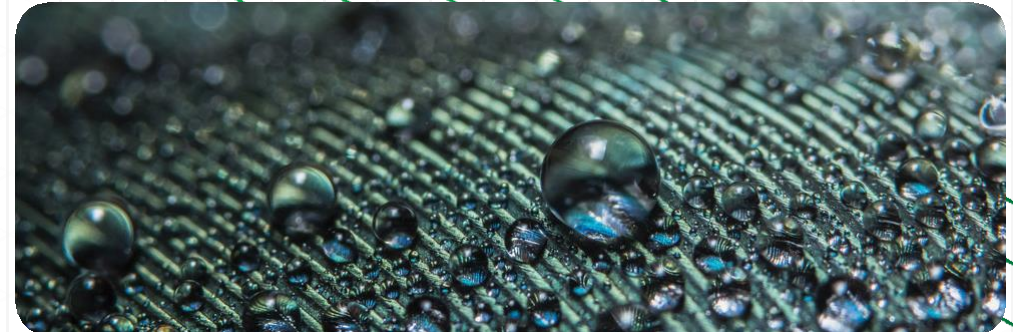
Padding



Immerse



Roll



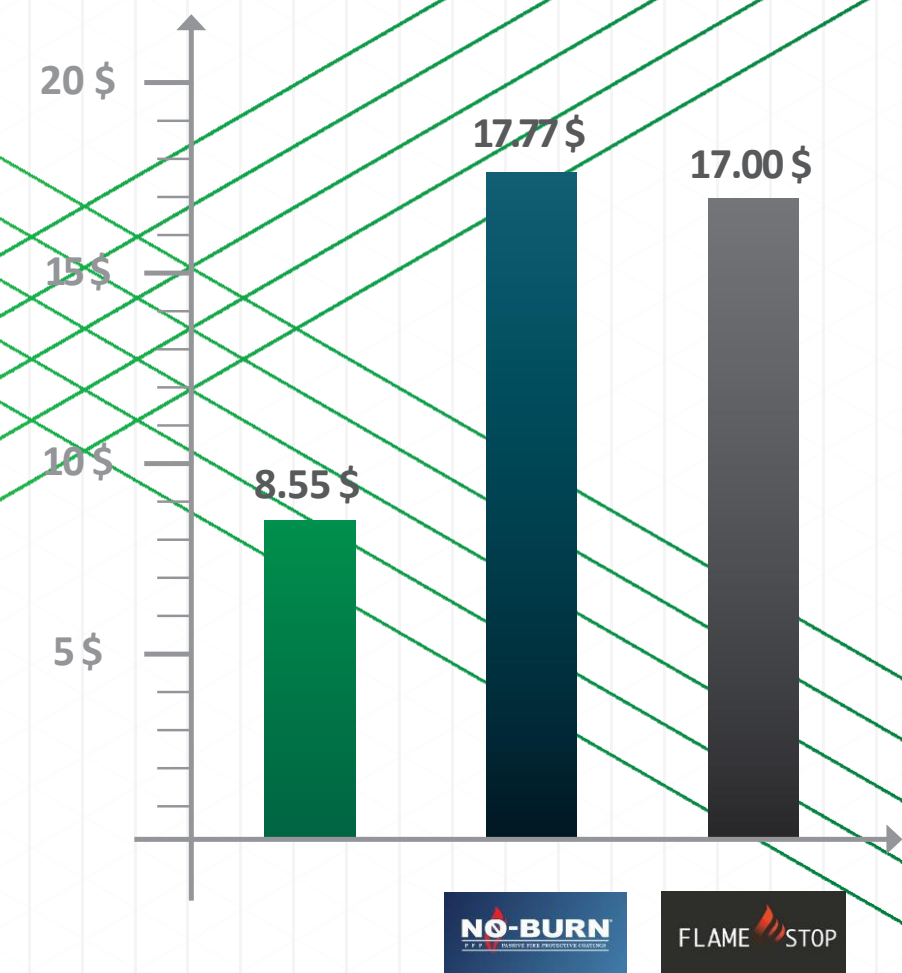
Plasma aided impregnation

COMPETITIVE ADVANTAGES

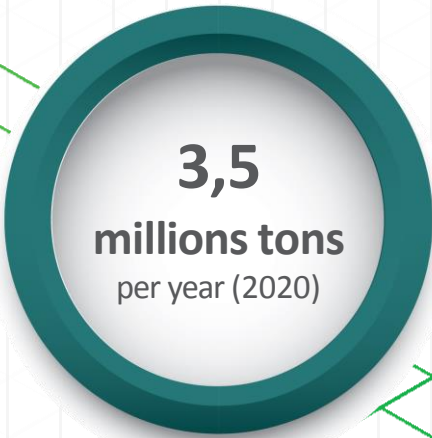
Techniques




Price/liter



GLOBAL FLAME RETARDANTS MARKET



CONSTRUCTION



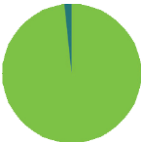
30% of global demand
(foams, rubber, paint, adhesives, varnishes etc.)

AUTOMOTIVE

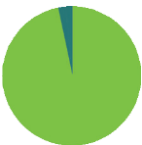


Highest growth by 2024
(wires, cables, etc.)

ELECTRONICS



6,4 % EU



12 % North America
Use of brominated FR

WILD FIRE, DIY KITS

Free niche!

GLOBAL CHEMICAL REGULATIONS (CURRENT & EMERGING)

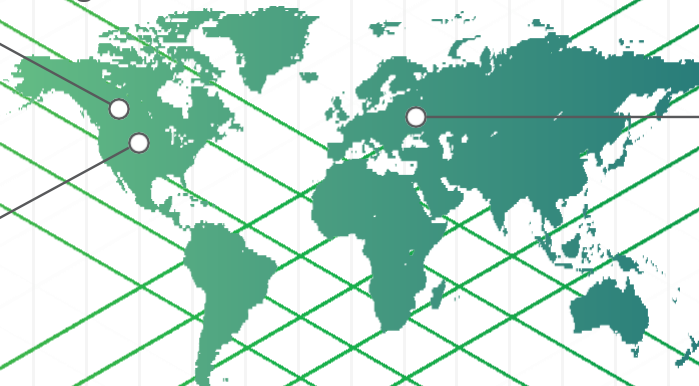
CANADA

1. Canada Consumer Product Safety Act (CCPSA)
2. Chemical Risk Assessment

USA

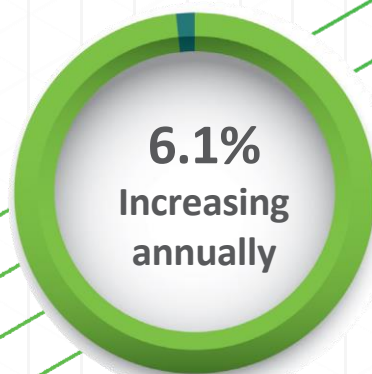
1. Family and Fire Fighter Protection Law
2. Federal Hazardous Substances Act (FHSA)

GLOBAL MARKET of FR is determined by the national and international regulations



EUROPE

1. REACH Regulation
2. CPL Regulation
3. Ecodesign for Sustainable Products Regulation
4. Construction Products Regulation



In respect to the Global Market regulations **FR production** is increasing annually with 6.1%.

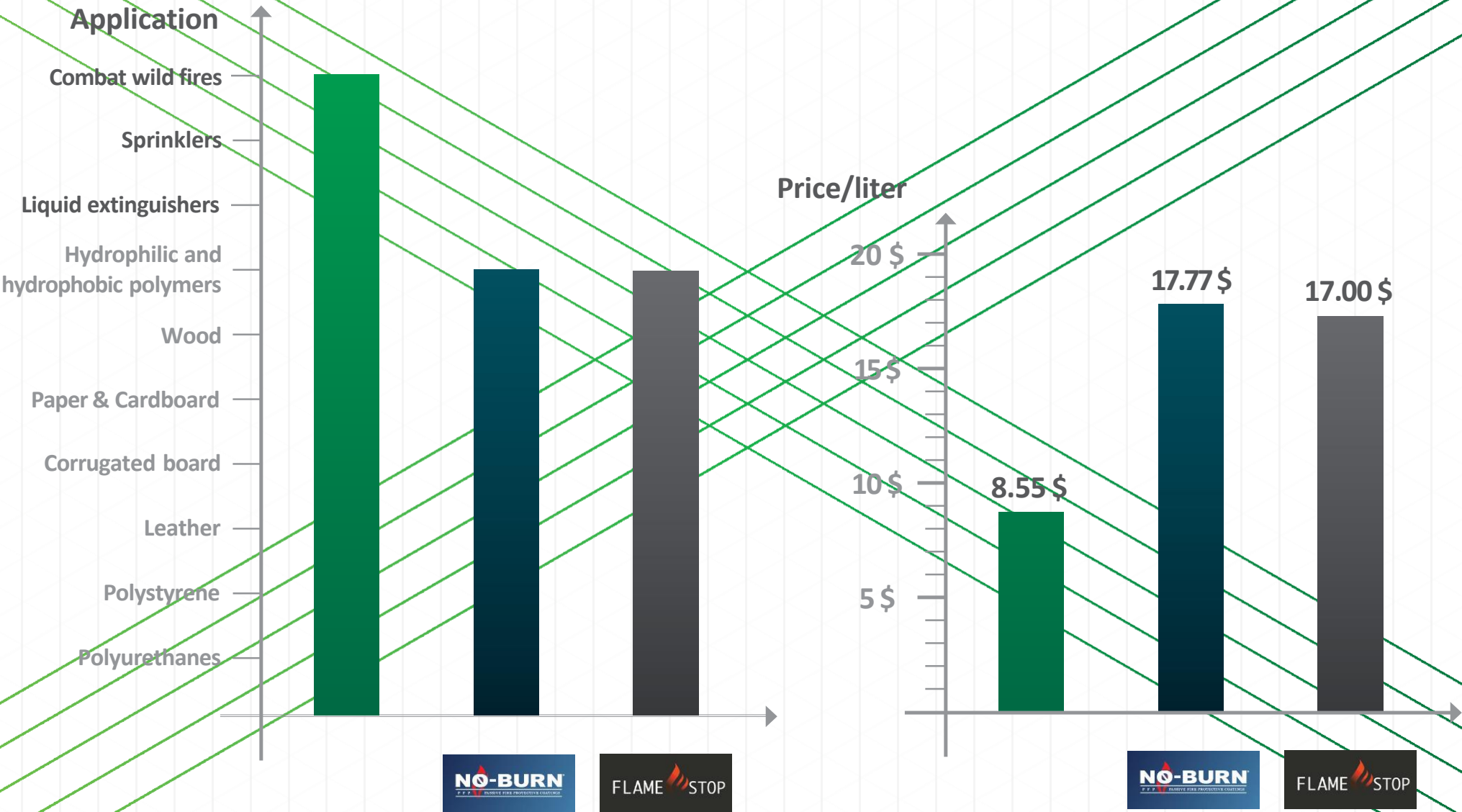
GREEN FLAME

Patent protected in **USA** and **EU**



Global market profit: 5,8 billions USD, 2018

COMPETITIVE ADVANTAGES



THANK YOU



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