



FIRE STOP

Technology Transfer: How We Did It

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Firestop Chemicals Ltd

“Fire safety is more important than ever. The applications for this industry range from aerospace to appliances. Every manufacturer needs to be aware of new regulations, and the products and processes that will meet them.

It is the companies that adopt the latest technology who will have the edge.”

*Flame Retardancy Industry Review,
Business Communications Company*

Talk Plan



- Technology transfer in Firestop
- Firestop: past and present
- Firestop products and market
- Partnership with ISTC
- Manufacturing in Russia

A Route to Technology Transfer



- A technology is identified by initial investors
- Direct contact is established with technology developers
- Economic feasibility of the technology/product is evaluated:
 - market place and size
- Technology transfer group emerges:
 - independent testing
 - customer approval
- Fundraising
- Patenting and certification
- Developing technology/product further to meet market criteria
- Manufacturing
- Sales

Company Background



- 1999 technology identified in Russia
- Technology transfer group emerges
- Listed at Alternative Investment Market in June 2002
- Prime Firestop shareholder



Flintstone

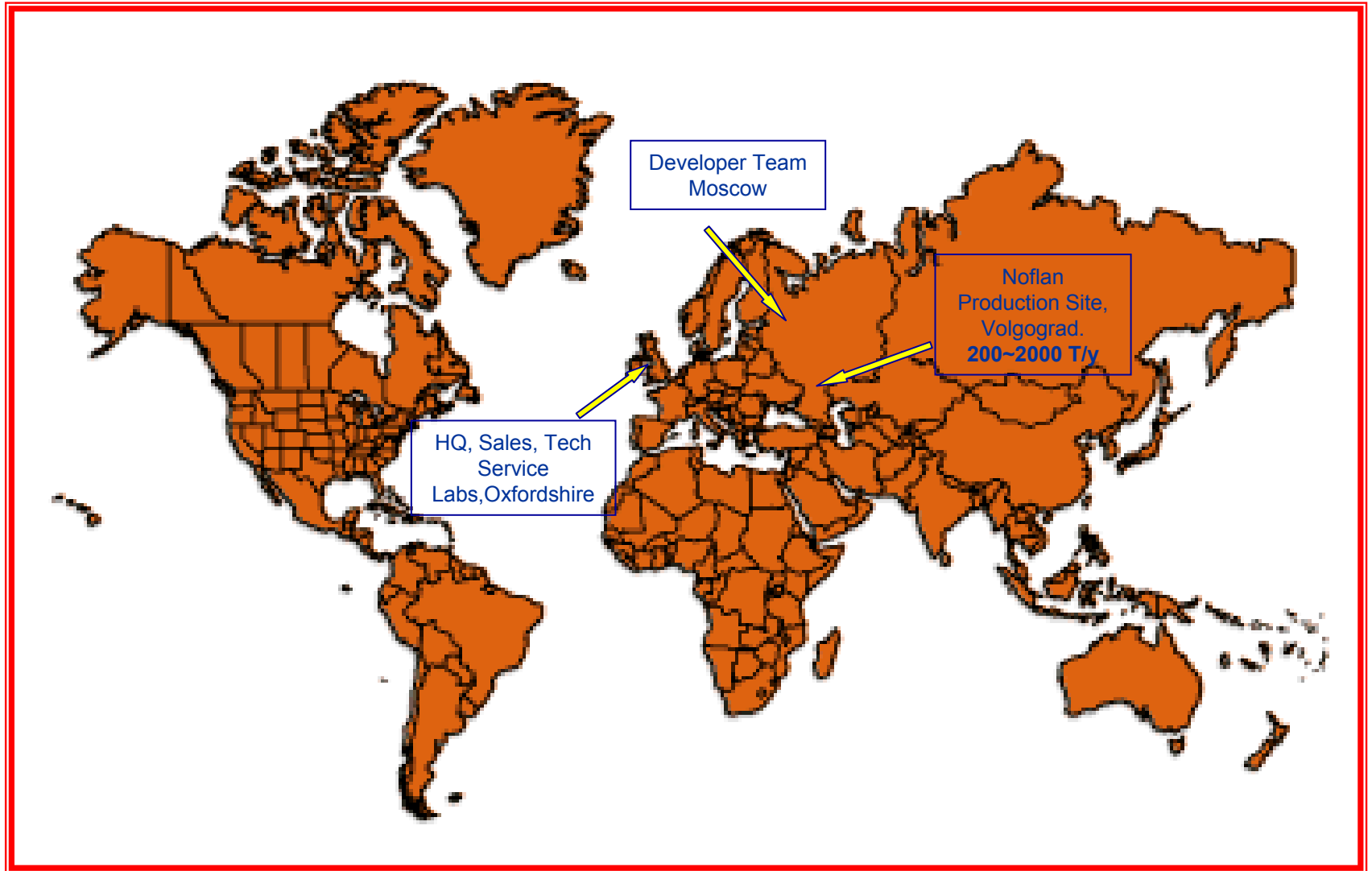


Company Objectives



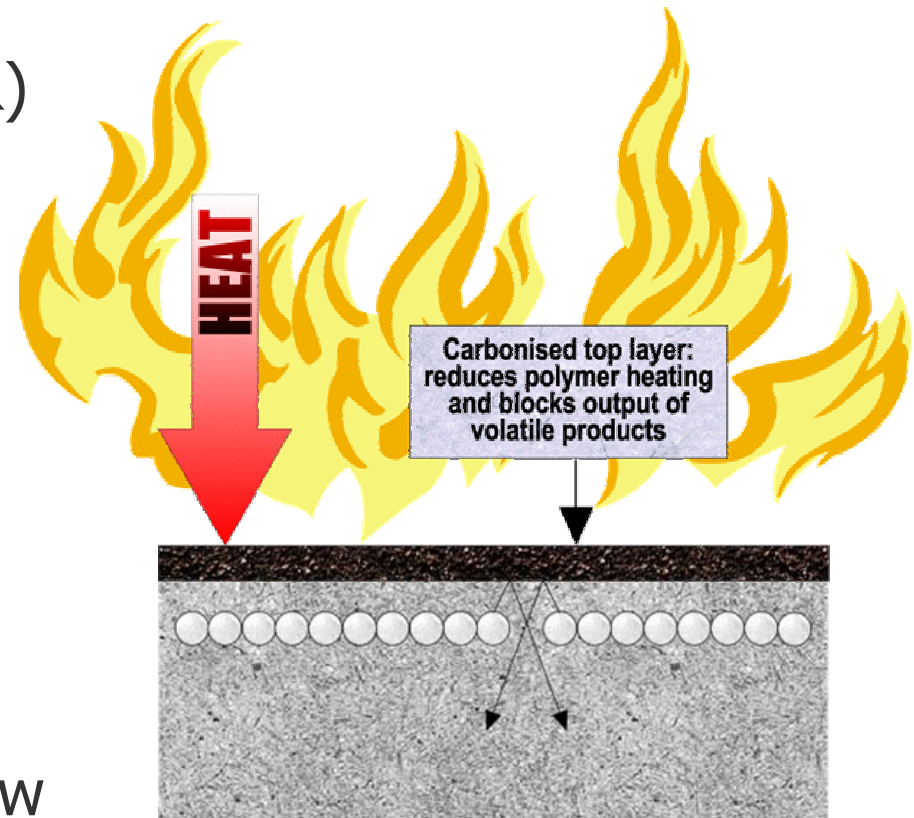
- Technology transfer
- Bridging the gap between scientists and manufacturers, between manufacturers and the market
- Creating profit for investors and inventors

Firestop Worldwide



Firestop Products

- Firestop specialises in Flame Retardants (FR)
- FR are value adding products that make flammable materials non-flammable
- Noflan® and Bizon™ are P-based FR
- The picture shows how they work



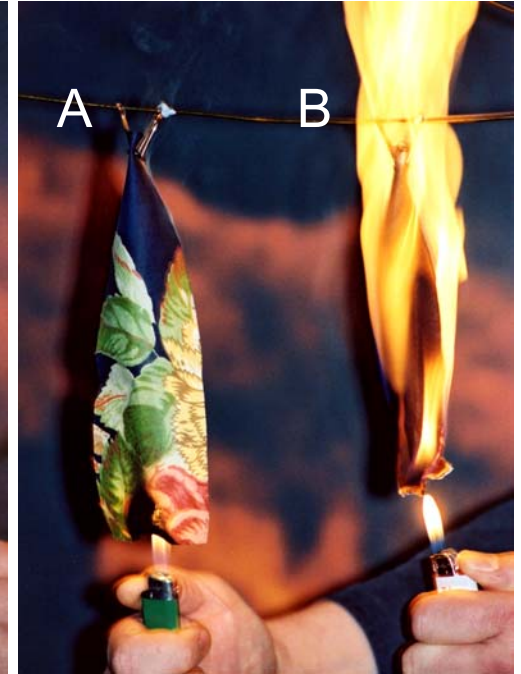
Testing of cloth treated with Noflan®



2 seconds after the flame was applied (A is treated with Noflan®, B is untreated)



4 seconds after the flame was applied



6 seconds after the flame was applied

Testing of cloth treated with Noflan® (continued)



And the end result after
15 seconds' burning:
Imagine it was your tie...

Product Range

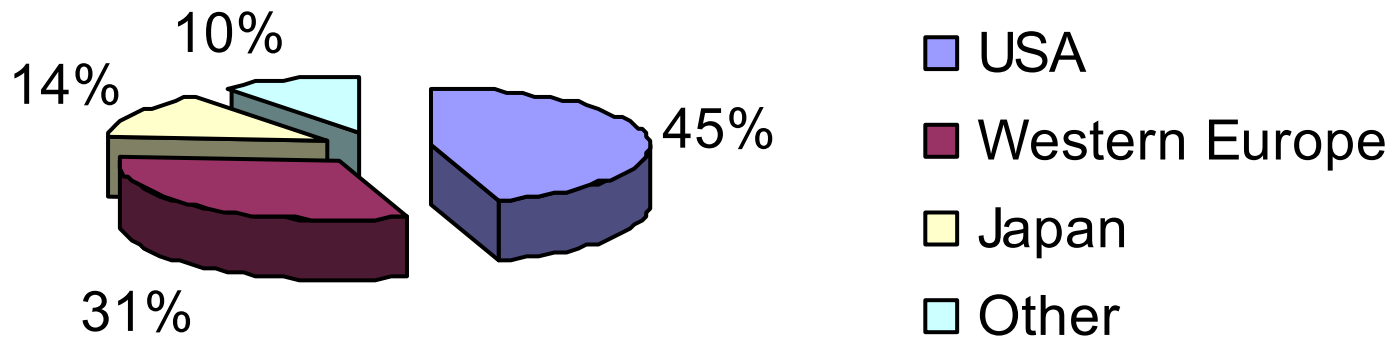


- Noflan®: For textiles in furniture, transport seating, contract seating and carpets
- Bizon™: For higher temperature plastics e.g.: Polypropylene and HIPS

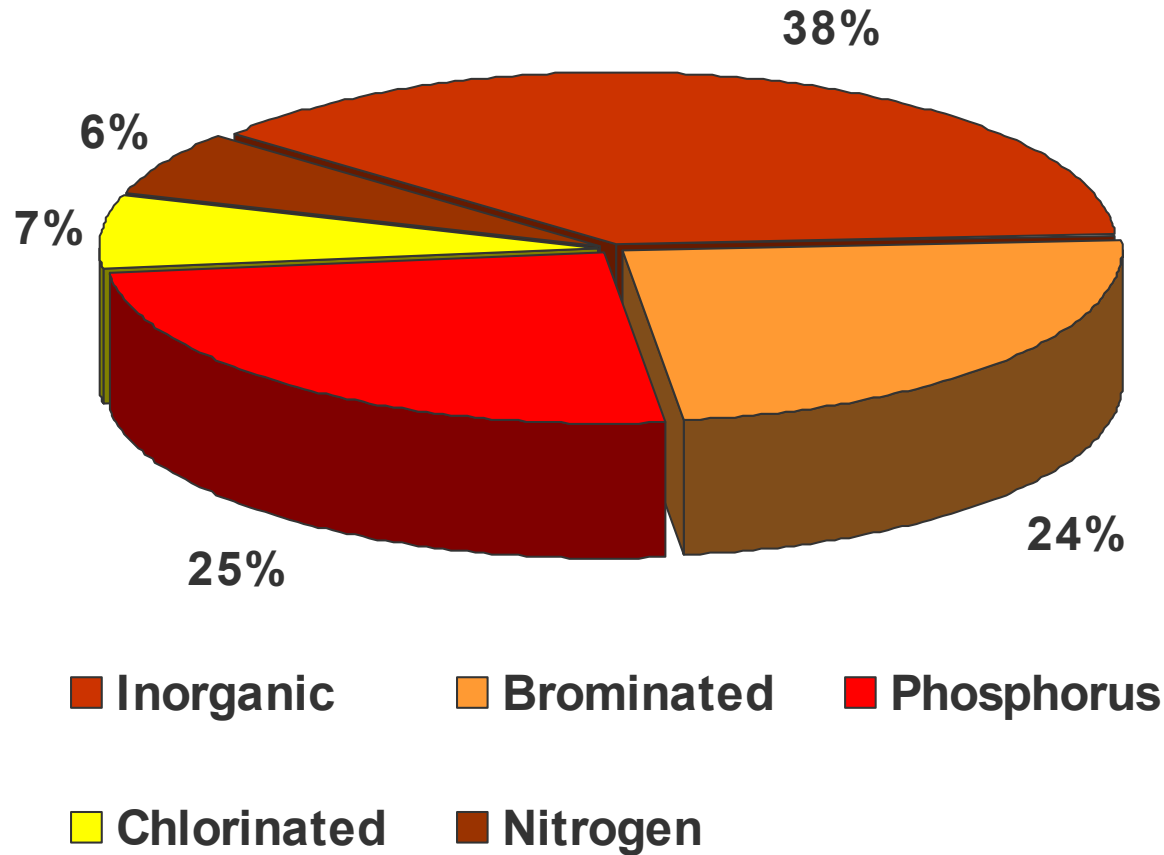
Global flame retardants market



Total market size 1.1 million tonnes



Breakdown of European FR market by product type



Firestop Investment To Date



- Three main shareholders: Flintstone, EBRD, a private investor
- Several minor shareholders including the product innovators
- Initial investment of £1,653,000
- Last fundraising £800,000
- Cost of IP and registration to date is €503,000

Firestop Product Patenting and Testing



International PCT patents and registered Trade Marks, cover all of Firestop's products in 37 countries, including:

The Euro patent countries (19), USA, Canada, Australia, Indonesia, Brazil, Israel, India, China and Eurasia.

All products are EINECS and TSCA tested and registered.

Total expenditure on IPR protection and testing
programme to date

€503,000

Firestop Development Programme



Stage	Noflan	Noflan E	Bizon	Nacryn	Noflan hal free	Khalt New
Laboratory synthesis	☑	☑	☑	☑	✓	✓
Viability evaluation	☑	☑	✓	x	2005?	2005?
Regulatory approval	☑	☑	☑		x	?
Patent cover	☑	☑	☑			
Customer lab testing	☑		Oct 04			
Prod'n protocol	☑	✓	✓			
Small scale prod'n	☑	2005, Q1	2005, Q2			
Customer approval	✓					
Full scale production	2004, Q2					
Sales	✓					

Identifying a manufacturer: Why Russia?

- Economic advantages
- Extensive industrial potential
- Experienced and innovative industrial designers
- Highly qualified technical staff
- VOCCO “Chemprom”, Volgograd - specialises in P chemistry
- Inventors and technologists speak the same language



Partnership with ISTC

- Risk for FS to invest into a Russian plant
- ISTC funds equipment for FS VOCCO-based manufacturing
- ISTC exercises control over investment and production line commissioning
- ISTC provides legal help
- ISTC project management group has local knowledge
- Gives us good PR



Firestop-VOCCO-ISTC

- Joint application FS-VOCCO for equipment funding within ISTC Sustainability Program
- Application processing and approval by ISTC - FAST!
- Signing a trilateral agreement FS-VOCCO-ISTC
- Procurement of equipment by ISTC in close contact with VOCCO
- The manufacturer must allocate funds to meet the cost of installation work and staff salaries

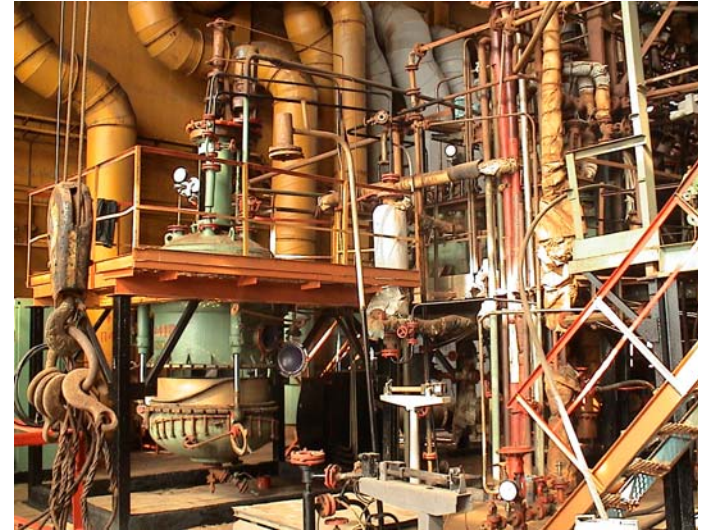


Signing the Trilateral Agreement: Remember to take a pen!



FS Project and Non-proliferation

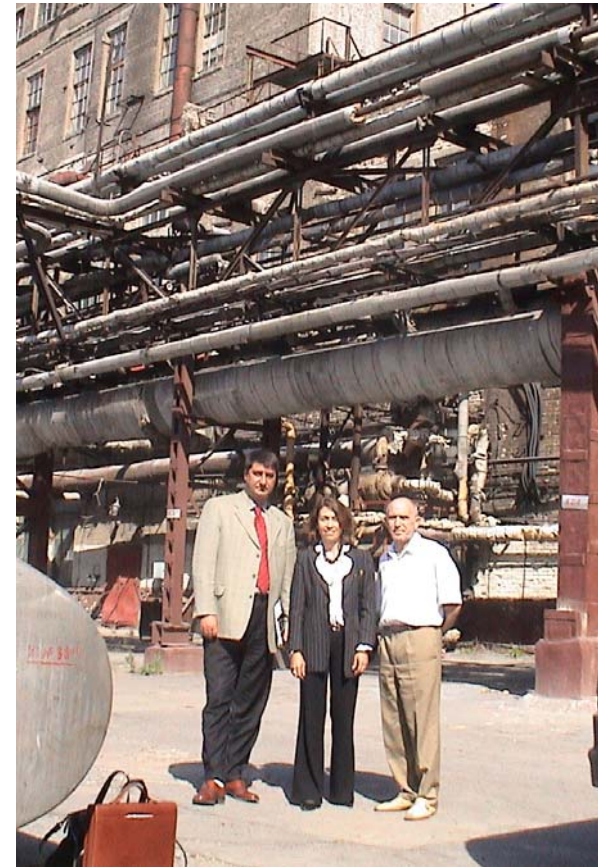
- FS project creates 51 jobs for the former chemical weapons industry workers at VOCCO
- Noflan production uses up a chemical weapon precursor
- Joint FS & ISTC effort creates a new manufacturing line at a plant with outdated equipment
- Production line for 20T/m initially with potential upscale to 200T/m



Specifics of Technology Transfer in Russia



- Gaining direct access to technology developers
- Scientists tend to overvalue their invention
- Challenges of direct contact between western managers and Russian partners
- A western company would benefit from project manager with local knowledge
- Russian plants usually have weak commercial and marketing departments
- Developing logistics routes
- Russian commerce is driven by “cash on dispatch” rule



Increasing value for investors

- Cost of the product *ex works* manufactured in Russia is 2.2 times lower than the cost of the same product manufactured in India
- Reduction of investment risks thanks to the help from the ISTC
- Improving logistics: shipping product directly from the manufacturing site
- Reducing tax: customs duties in Holland are 4 times lower than in the U.K.

Future Plans

- Upscale Noflan manufacturing at VOCCO from 20T/m
- FS R&D in Russia to develop Bizon to the standards of the FR market
- FS in partnership with the ISTC to allocate a Russian industrial design developer for Bizon production process
- FS & ISTC joint investment into Bizon manufacturing

**For further information, please
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