Fire-Shield I AG

Innovative ideas for fire protection, prevention and extinguishing systems

PyroBubbles®

INNOVATIVE FIRE PREVENTION, RELIABLE, SAFE AND MAINTAIN VALUE.

THE FIRE PROTECTION METHOD PyroBubbles®

PyroBubbles® are a hollow glass granulate. They consist of 100% inorganic materials, the main component is silicon dioxide. In preventative fire protection it is allocated material class A1. As extinguisher it is certified by the Material Testing Institute Dresden for fire classes A, B, D and F in accordance with DIN EN. PyroBubbles® is a patented product that is exclusively sold by
Fire-Shield I AG.

Properties:

- **Low mean and gross granulate density:**

The granulate sizes between 0.5 and 5 mm form a dense layer and so ensure a suffocating effect.

- **Permanent floating properties:**

PyroBubbles® swim on the surface of liquids and are particularly suitable for fighting liquid fires.

- **Low thermal and electricity conduction:**

PyroBubbles® are distinguished by their low thermal conduction, insulation and low electric conduction.

- **Thermic and chemical resistance:**

Due to its material compound, the granulates are highly heat and chemical resistant.

- **Also great usability in high temperature areas:**

Under thermic conditions (> 1,100°C) PyroBubbles® melt and form a closed layer over the fire load.

• **No subsequent damage through extinguishing agents:** Particularly in sensitive areas, such as museums, archives or data processing systems, PyroBubbles®, can reduce the often immense extinguishing damage to a minimum. Operational interruptions and long disruptions are avoided.

• **PyroBubbles®:**
Low investment costs and the lowest of servicing costs!

Application examples:

• **Metal fires:**

PyroBubbles® are suitable for fighting metal fires. Even thermite fires can be conquered. The extinguisher effect lies in the drawing of energy when melting (cool effect) and the resulting gas impermeable glass layer (suffocation).

• **Wind turbines:**
Wind power stations are a valuable investment asset. Even older systems with low fire prevention measures are still in use. Due to the extreme height of the windmills fire brigades are often powerless so that preventative protection measures, also subsequently applied, are necessary.

- **Bengal fire/Bengalos:**

With temperatures of over 2,000°C Bengal fire is hard to control, water, extinguishing powder and CO_2 - extinguishers are ineffective. For this, the special PyroBubbles® -Bengalo-Safe container was developed: the extreme suffocating effect and melting from 1,100°C ensure **"Bengalos"** burn out quickly, controlled and safely in the container.

- **Cable fires:**

With PyroBubbles® a comprehensive protection of electronic systems and particularly cable systems is possible. Also the subsequent introduction into existing track systems and protection of supply shafts in existing buildings is no problem.

- **Lithium ion batteries:**

In the electric mobility sector, energy storage devices (e.g. lithium ion batteries) are used that under certain circumstances require handling as hazardous goods. Transport, manufacture and use require special protective measures. PyroBubbles® -LIONGUARD® is a packaging method acknowledged the Federal Institute for Materials Testing. It enables a safe and economic transportation of defective or damaged batteries.

FURTHER POSSIBLE USES . .

PyroBubbles® are also suitable for use in the following areas:

- **Liquid fires, e.g. hardening baths**

The granulate swims on the liquid and suffocates the fire.

- **PyroBubbles® are universally usable and extinguish Class A, B, D and F fires.**

- **Museums,Archives**

PyroBubbles® do not cause extinguisher damage and are therefore suitable for use in museums and archives etc.

- **Production machines**

Also by high temperature development outbreak of fire is directly hindered.

- **Hazardous goods transport**

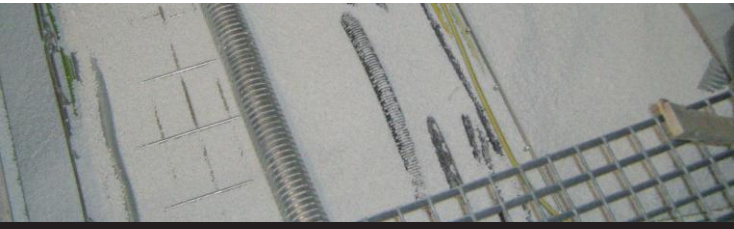
PyroBubbles®-LIONGUARD® is a Federal Institute of MaterialsTesting packaging method for the transport of damaged lithium ion batteries.

- **Foundries, smelting ovens and hardening baths**

Also suitable for high temperature areas. Due to the high suffocation effect, the fire is extinguished or regulated through the metal pouring cooling speeds through an insulation effect.

- **EDP systems**

Fire prevention through improvement of fire prevention through filling of hollow areas.



PROBLEM FIRE LOADS AND SPECIAL SOLUTIONS

Would you like to test PyroBubbles® on-site?
Are you looking for individual solutions?

Please contact us!
We are happy to advise you.

Delivery units: **250 kg BAG [1000 l] - UVP 1.000,00 €**
16,0 kg Sack [64 l] - UVP 79,00 €
12,5 kg Sack [50 l] - UVP 62,00 €

For orders we distinguish between:

- *PyroBubbles® Fluid for liquid fires and fuels*
- *PyroBubbles® Premium for solid fuels and metal fires*

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