


An ISO 9001:2000 Company



Low Smoke

Non-Carcinogenic

HALOGEN FREE COMPOUNDS

HALOGEN FREE COMPOUNDS

Eco Friendly

Non-Corrosive

Fire Resistant



SHAKUN

SHAKUN POLYMERS LIMITED

Introduction

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SHAKUN POLYMERS LIMITED

Is one of the leading manufacturers of Wire and Cable Compounds in India. It started its manufacturing activities in the year 1991. SHAKUN has Corporate Headquarters situated in Vadodara, Gujarat, (India) & its manufacturing facilities are situated at Daman & Halol, Gujarat.

It caters to the requirements of the Telecommunications industry by supplying Polyethylene Compounds for Jelly Filled Telephone Cables, Optical Fibre Cables and also Power Cables for insulation, sheathing and jacketing applications.

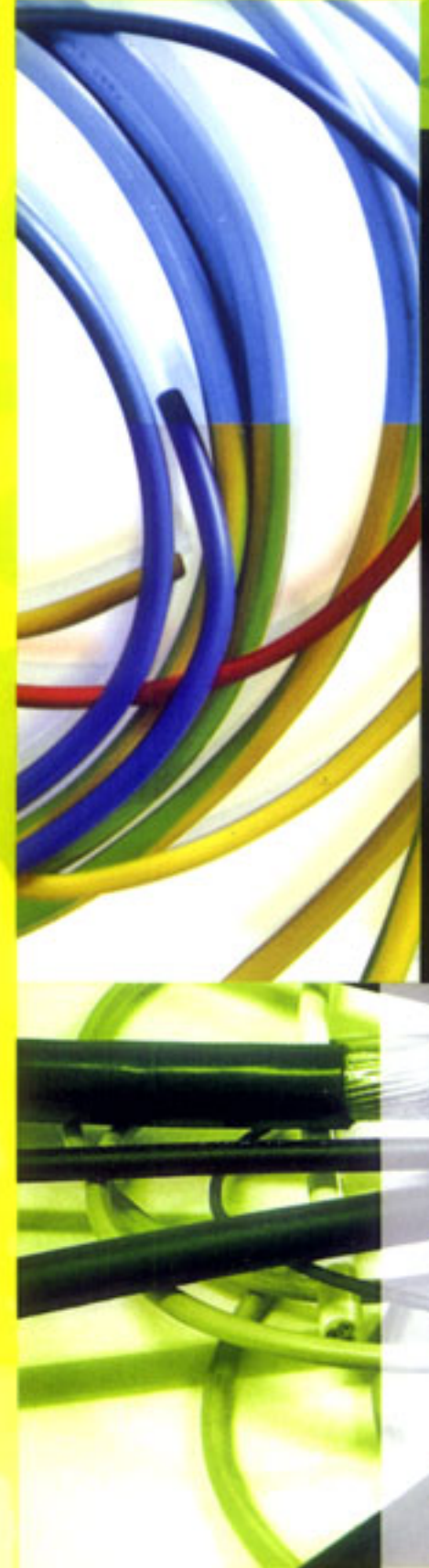
Special films for ESD packaging like Antistatic and Conductive Bags are also being manufactured for Electronic Industries and Explosives handling.

Shakun Polymers Ltd. also manufactures special Semi conductive Thermoplastic Compounds for Power Cable applications and is engaged in Custom Compounding for Tailor made products.

The high level of in house know-how with particular attention on production technologies is a striving force of Shakun. The internal use of this know-how and continuous research and development activities keeps it ahead of competition.

The product quality standards offered are continuously monitored and guaranteed. Shakun invests its resources periodically in manpower, test equipments for Research & Technological development with an aim of upgrade its production capacities.

Shakun Polymers Ltd. has introduced a wide range of Halogen Free Flame Retardant Compounds for wire and cable markets.



Why not PVC?

Why not PVC?

Safety of cables is a key issue for producers and users of cabling, both with respect to personal safety and to equipment protection (corrosion) in case of fire. Presently the safety issue only concerns cables. As per the latest study of PVC, 99% cables are made of POLY VINYL CHLORIDE (PVC).

Experts find that more than 80% of people killed in fire die by suffocation and smoke inhalation.

Until recently most installation cables were PVC sheathed, and halogen free cables were only applied in a few special cases. However, a significant change of attitude and regulation is now developing in the market. As per the regulation, the screened cables must be halogen free. These new requirements of halogen free cables have significant impact on the safety and especially the fire rating of the cables.

PVC is in most respects an ideal sheathing material. Superior mechanical characteristics are combined with high reliability. However, two main drawbacks have forced the development of alternative, halogen free sheath materials.

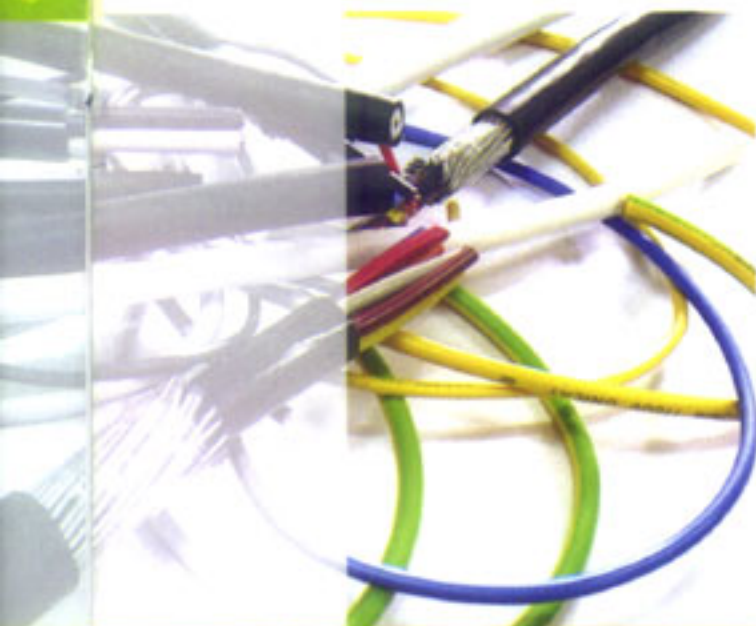
First issue concerns environmental considerations in connection with use of PVC. Key words like "acid rain", "dioxine formation", "pollution with heavy metals", "fertility of man and male animals" and "cancer risk" are important environmental arguments connected with PVC.

Secondly forcing substitution of PVC concerns the fire behaviour. In a fire situation burning or extensive heat causes:

- development of heavy black smoke.
- development of hydrochloric acid and some poisonous gases.

Together these two factors affect human safety incase of fire.

Development of hydrochloric acid may destroy electronic equipment, machinery and buildings. The chlorine will contaminate all surfaces exposed to the smoke and may cause severe corrosion in a very short time.



What is Zero Halogen Flame Retardant ?

Zero Halogen Flame Retardant (ZHFR) Compounds is a superior and safer alternative to PVC.

ZHFR compounds are filled with hydrated fillers which release water during fire. They are User Friendly and

- Can be processed on existing machinery
- Require no additional capital equipment
- Require no additional processes

They are environment friendly compounds :

- Do not produce Corrosive Gases like
| Chlorine | Fluorine | Bromine
- No Hazardous Fumes
- Non Toxic
- Non Carcinogenic (No Cancer Risk)

But why Zero Halogen Flame Retardant ?

- More time to escape
- Lower heat generated
- Extremely low release of toxic & irritant gases
- Reduction of consequential damages

Where should we use ZHFR Compounds ?

- In confined spaces without Exits
- In crowded places
- In places where movement is restricted
- In rooms where valuables are stored

ZHFR Compounds are also known as :

- LSOH : Low Smoke Zero Halogen
- LSZH : Low Smoke Zero Halogen
- HFFR : Halogen Free Flame Retardant
- FRZH : Flame Retardant Zero Halogen
- LSFRZH : Low Smoke, Fire Retardant, Zero Halogen
- ZHFR : Zero Halogen Flame Retardant
- Eco Friendly (Green Compound)

Applications

Applications

- Ships
 - Aircrafts
 - Offshore installations
 - Nuclear power plants
 - Public buildings
 - Cinema halls
 - Departmental stores
 - Office buildings
 - Trains
 - Underground railways
 - Old age homes
 - High rise buildings
 - Valuable electronics
 - Precise mechanical eqpt.
- Refineries
 - Chemical plants
 - Electricity companies
 - Gunpowder factories
 - School buildings
 - Discos
 - Blocks of Flats
 - Hotels
 - Tunnels
 - Prisons
 - Hospitals
 - Stables
 - Heritage Buildings
 - Airports

Zero Halogen Compound should be compared with what ? PVC

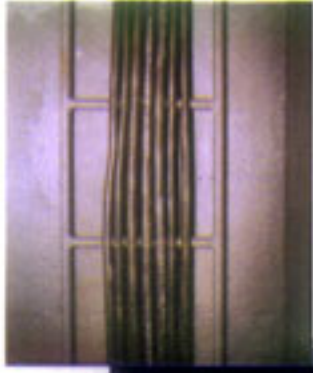
How Zero Halogen Compound compares with PVC ?

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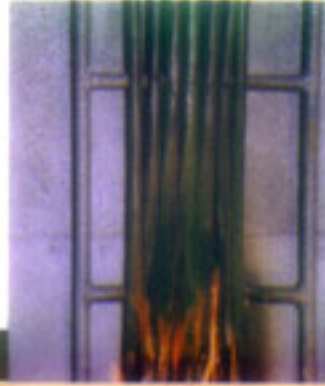
PROPERTIES	PVC	ZERO HALOGEN
Halogen Gas (mg/g)	190-300	<0.5
Corrosive Gas (pH)	1-2	6
Smoke Density (Rating)	50-80	< 15
Usage Temperature (°C)	60-65	90
Low Temperature (°C)	-20	-50
Toxic		
Dioxin	YES	NO
Halogen Gas	YES	NO
Lead	YES	NO



Performance in Fire Test



Sheathed cables are mounted on the ladder for IEC 60332 part 3 fire test.



The cables are set on fire to reproduce the actual fire conditions.



The fire is now raging fully reproducing peak fire conditions.

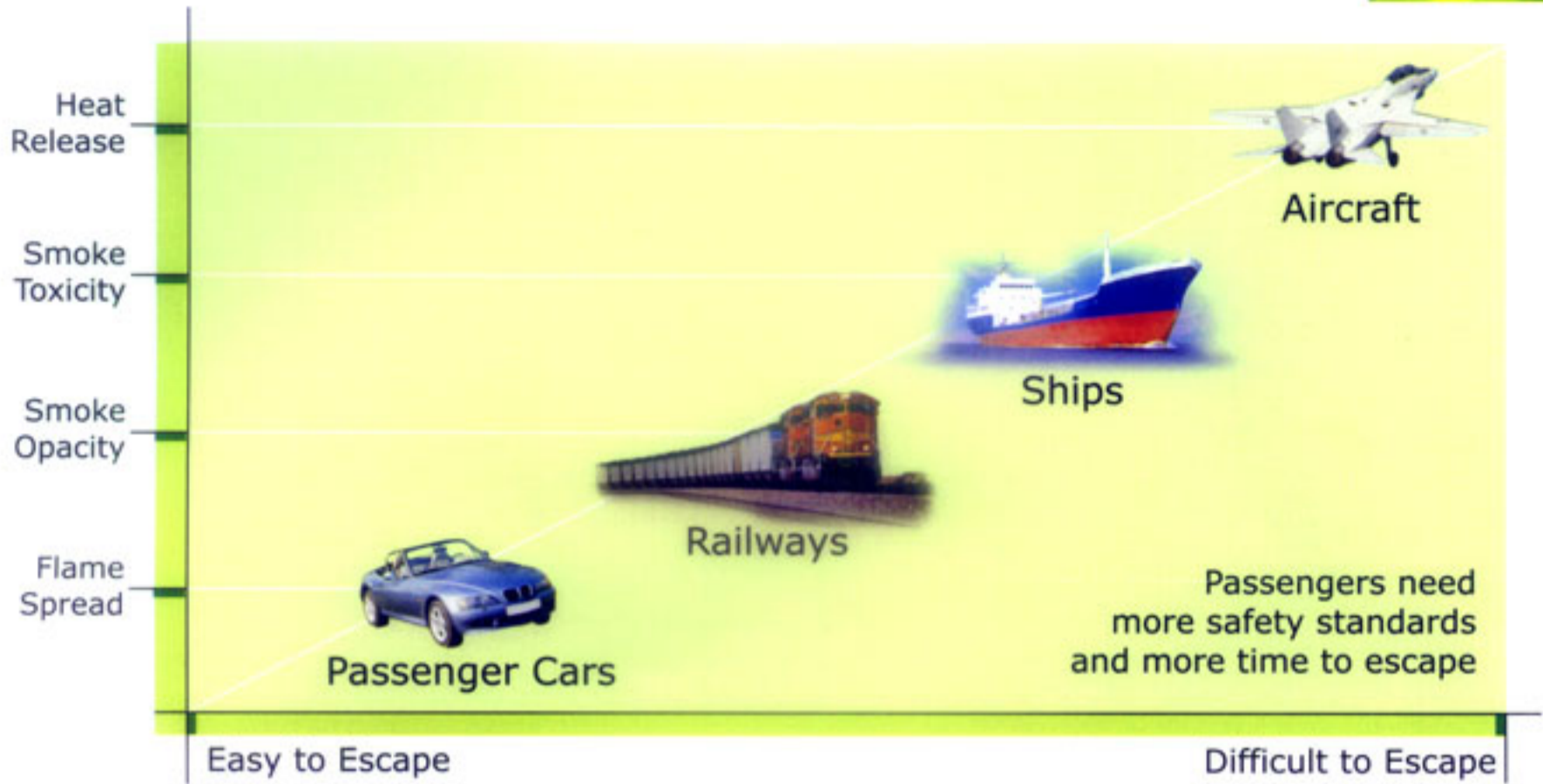


The fire has extinguished of its own. The burnt cables on the ladder are measured for the exact extent of fire damage.



The cables have successfully passed the fire test. The damage and charring did not exceed 2.5 mtrs.





Safe Buildings

Safe Buildings

With increasing demand for safe buildings, more attention is being paid to the types of cables being installed and potential risks in the events of fire. It is now recognized that smoke and poisonous fumes are often greater risks to life and property than fire itself.

Also EU (European Union) has changed its environmental regulations for the plastics industry, stating that the phase-out of all the halogenated flame retardants in plastic materials, together with other toxic heavy metals such as lead, cadmium, mercury, hexavalent chromium will take effect from January 1 2006.

PVC
emits 28% of HCL

Halogen Free Compounds
emits < 0.5% of HCL.



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