GABRIEL-CHEMIE
GROUP

Avoid corrosion for electronic equipment

Full range of products with more than 10 masterbatches

Avoid corrosion of extruders

Improved recyclability

This flame retadardant masterbatches series enable to produce electrical conduits comply to FR norm **EN 61386**, to Low Smoke **IEC 61304-2** and to halogen-free standard **EN 50642**.

WWW.GABRIEL-CHEMIE.COM

Gabriel-Chemie has been a leader in the production of flame retardant masterbatch for many years. One of the groups main objectives is sustainability. Which is why Gabriel-Chemie has successfully developed a series of halogen-free flame retardant masterbatches for the electrical tube conduits market. The electrical conduits market has always been dominated by halogenated flame retardant masterbatches but it is essential to use halogen-free products for the reasons of sustainability.

The flame retardant norm required for electrical conduits is **EN 61386**

According to this norm the following criteria have to be met:

- **Flaming or glowing of the sample is extinguished within 30 seconds after removal of the test flame**
- **The tissue paper below the pipe does not ignite**
- **After extinction of the flaming or glowing of the sample there is no evidence of burning or charring within 50 mm of the lower extremity of the upper clamp**

Time of exposure of the sample to the flame depends on:

- **Diameter pipe**
- **Thickness of pipe**

The greater the diameter or thickness, the greater the flame exposure time.
For this reason a ranging Masterbatch dosage is suggested.
The suggested range lies between 3% and 10%, depending on pipe diameter and thickness.

Diameter	Dosage suggested
16 mm	3%
20 mm	4%

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The HF limits required for electrical conduits are described in **EN 50642**

Maximum limits of halogens accepted according to standard EN 50642 are:

Compound	Max. Limits
Brominated compounds (Br)	0.15%
Chlorine compounds (Cl)	0.15%
Fluorinated compounds (Fl)	0.30%
Compounds of Iodine (I)	0.30%

TOTAL halogen content (Br, Cl, Fl, I): 0,4%

The smoke test norm required for electrical conduits is **IEC 61304-2**

It is important to comply with IEC 61304-2 because in the event of a fire, these conduits do not emit opaque fumes and guarantee visibility higher than 60%, which enables the identification of emergency exits.

Using our Maxithen series the halogen content of conduits is less than 0.10%, far below the threshold set by the EN 50642 standard. In other words, the halogen content of conduits produced with Gabriel-Chemie masterbatch is 10 times less than other conduits available on the market. For this reason, conduits meet the much more restrictive requirements of the Sweden Nordic Ecolabel.

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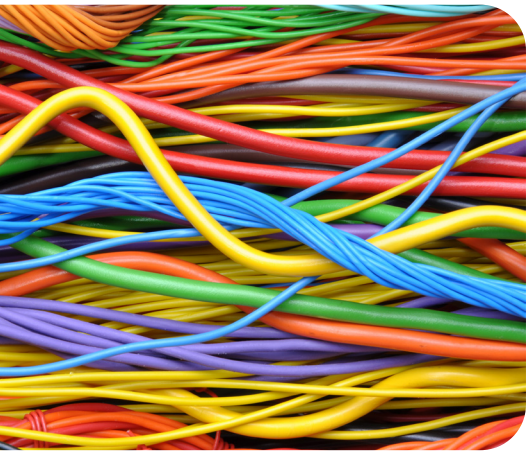
The benefits of using **HF conduits** are:

- **Avoiding corrosion phenomena for electronic equipment**
- **Avoiding corrosion of extruders**
- **Emitting a negligible amount of toxic gases during combustion**
- **Improving the recyclability of plastic**
- **Improving outdoor properties**

All the codes below have been tested in combination with **PP Ineos 400NA-01**



Colours	
Similar to	**Code**
RAL 7031	PP9MB02221FR
RAL 7035	PP9MA8727FR
RAL 7037	PP9MA8047FR
RAL 9003	PP1MA2847FR
RAL 9005	PP9MA8737FR
RAL 9010	PP1MA2747FR
RAL 2004	PP3MA1337FR
RAL 3002	PP4MA4117FR
RAL 3009	PP8MA1757FR
RAL 5015	PP5MA5257FR
RAL 6037	PP6MA3457FR
PURPLE	PP5MA5267FR
NATURAL	PP7MA1477FR
RAL 9005	PP9MA8747UVFR
RAL 7035	PP9MA8757UVFR
NATURAL	PP7MA5017UVFR

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