



PRODUCT

Expandable Graphite GREP-EG

3-1

COMPOSITION

Special treated expandable graphite controlled expansion until 230°C

ADVANTAGES

- High efficiency non-halogen flame retardant for several resins.
- High flame retardancy is achieved with lower loading level.
- Minimize deterioration of physical properties.
- Minimize smoke emission during burning.

PROPERTIES

| | |
|-----------------|-------------------------|
| Appearance | Black Powder |
| Moisture | ≤ 0.3% |
| Expansion ratio | 180 ~ 230cc/g (1,000°C) |
| pH | 6.0 ~ 9.0 |
| Particle Size | 300 ~ 400 μm |

Particle size distribution

| | |
|----------|-------|
| +24 mesh | 0.5% |
| +32 mesh | 3.0% |
| +48 mesh | 63.5% |
| +60 mesh | 13.0% |
| +80 mesh | 10.0% |
| -80 mesh | 10.0% |



PRODUCT

Expandable Graphite GREP-EG

3-2

STATE OF EXPANSION



Not-Expand and Expanded



Expanding of GREP-EG

APPLICATION

Thermoplastics

PACKAGE

20kg net paper bag

FORMULATION

- Knead at milder condition to prevent collapse of particle.
Once collapsed, deteriorate flame retardancy.
- Perform powerful ventilation at vent of extruder.
- Do not use mesh at head of extruder.



PRODUCT

Expandable Graphite GREP-EG

3-3

THERMOPLASTICS FORMULATION COMBINED WITH RED PHOSPHOROUS

| | PP | | | | HIPS | | LDPE | | ABS | |
|---------------------|------|------|------|------|------|------|------|------|------|------|
| Resin | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| GREP-EG | | 8 | 10 | 10 | | 8 | | 10 | | 10 |
| Red-P (Powder) | | 4 | 5 | 5 | | 4 | | 5 | | 5 |
| Mg(OH) ₂ | | | | 25 | 1 | | | | | |
| Oxygen Index | 19.0 | 26.0 | 27.0 | 31.5 | 18.5 | 29.5 | 18.5 | 28.0 | 18.5 | 30.5 |
| UL94 3.0mm | HB | V0 | V0 | V0 | HB | V0 | HB | V0 | HB | V0 |
| UL94 1.5mm | HB | V2 | V0 | V0 | HB | V0 | HB | V0 | HB | V0 |

THERMOPLASTICS FORMULATION COMBINED WITH AMMONIUMPOLYPHOSPHATE

(FCP-770 → complex of surface treated ammonium polyphosphate and nitrogen flame retardant)

| | PP | | HIPS | | LDPE | | ABS | |
|--------------|------|------|------|------|------|------|------|------|
| Resin | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| GREP-EG | 15 | 15 | 20 | 25 | 15 | 25 | 20 | 25 |
| FCP-770 | 20 | 25 | 15 | 20 | 10 | 25 | 15 | 20 |
| Oxygen Index | 28.0 | 30.0 | 27.0 | 28.0 | 28.0 | 28.5 | 27.0 | 31.0 |
| UL94 3.0mm | V0 | V0 | V0 | V0 | V0 | V0 | V2 | V0 |
| UL94 1.5mm | V2 | V0 | V2 | V0 | HB | V0 | V2 | V0 |

EPDM FORMULATION

| | | | | |
|----------------|-----|------|------|-----|
| EPDM | 342 | 342 | 342 | 342 |
| Curing Agent | 4.3 | 4.3 | 4.3 | 4.3 |
| GREP-EG | 25 | 33.3 | 16.7 | 40 |
| Red-P (Powder) | 25 | 16.7 | 33.3 | 10 |
| UL94 1.0mm | V0 | V0 | V0 | V2 |