# Product Data Sheet

AkzoNobel Powder Coatings
**Interpon APP120**
**EL140G**

## Product Description

Interpon APP120 is a powder coating primer, totally free from Zinc. It is designed to give enhanced corrosion protection of mild steel and is an epoxy-polyester primer including active anticorrosive pigments. The addition of these pigments provides a steel passivation effect to protect the substrate enhancing the performance when compared to other non-active systems. Interpon APP120 can be used as a holding primer (maximum delay 6 weeks) but must be over-coated with a powder topcoat finish to generate an “Interpon APP120 System”. Liquid topcoats can also be used.

## Powder Properties

| | |
|---|---|
| **Chemical type** | Epoxy polyester hybrid |
| **Specific gravity** | 1,65 - 1,75 g/cm³ |
| **Particle Size** | Suitable for electrostatic spray |
| **Cure Schedule** | See curing conditions section |
| **Storage** | Dry, cool conditions below 30°C |
| **Shelf life** | 12 months |

## Test Conditions

The results shown below are based on mechanical and chemical tests which (unless otherwise indicated) have been carried out under laboratory conditions and are given for guidance only. Actual product performance will depend upon the circumstances under which the product is used.

| | |
|---|---|
| **Substrate** | Steel, Bonderite 1000, 0.8mm |
| **Pretreatment** | Iron phosphate with chromate passivation |
| **Application method** | Electrostatic Spray |
| **Cure Schedule** | Primer - 2 minutes at 200°C (as primer for complete system) , “Green- Cure”<br>Topcoat – 10 minutes at 200°C |
| **Film Thickness** | 60-80 microns (Basecoat)<br>60-80 microns (Topcoat - Interpon D1036) |

## Mechanical Tests

| | | |
|---|---|---|
| **Impact** | ISO 6272 | Pass 2mm |
| **Adhesion** | ISO 2409 (2mm Crosshatch) | GT0 (APP120 alone)<br>GT0 (APP120 + topcoat) |
| **Erichsen Cupping** | ISO 1520 | Pass 7mm (APP120 alone)<br>Pass 6mm (APP120 + topcoat) |
| **Flexibility** (cylindrical Mandrel) | ISO1519:1973 | Pass 3mm (APP120 alone)<br>Pass 3mm (APP120 + topcoat) |
| **Gloss** (60°) | ISO 2813 | 65-75 units |

## Chemical and Durability Tests

The Interpon APP120 system provides excellent protection against corrosion on the surface to which it is applied. However the efficiency of this protection depends upon the surface, its preparation before coating and the topcoat applied. If there is penetrating damage to the coating system, there may be localised signs of corrosion where damage has occurred but this will not affect the adhesion of the film to the adjacent surface. Interpon considerably limits the extent of spread of corrosion in the event of coating damage

| | | |
|---|---|---|
| **Neutral Salt Spray** | ISO7253 | Results detailed in Table 1 of Appendix |
| **GM Cyclic** | General Motors - 15 cycles | Results detailed in Table 1 of Appendix |
| **Natural Exposure** | ISO 12944 | Results detailed in Table 1 of Appendix |

## Pre-treatment

For maximum protection it is essential that **Interpon APP120** is applied to a clean, dry, oxide-free ferrous metal surface, followed by recommended Interpon topcoat. Surface preparation depends upon the type of surface, its condition and the required performance. For good protection against corrosion the following is recommended:

***Degreasing & phosphating*** followed by passivation, rinsing with demineralised water and drying. Follow the procedural advice of the pretreatment supplier **and/or**

***Blast clean*** to at least SA 2.5 in accordance with ISO 8501.1, 1998 (F), or Swedish standard S15 05.09.00 with a sharp angular surface profile of Rz 35-65 µm, Ra 6–10 µm

## Application

**Interpon APP120** is suitable for electrostatic spray and for tribo depending on the tribo equipment
**Recommended film thickness** **60-100 µm**

For marine applications, related to cycles approved RINA / DM, the thickness of the metal support must be> = 0.6mm, and the thickness of the coating film must respect the value of 80µ ± 10%

## Curing

Interpon APP120 must be cured the following conditions, depending if it is immediately overcoated or used as holding primer. The conditions depend also on the topcoat type: liquid or powder.

**For Immediate overcoating**

| System | | Interpon APP120 + Powder topcoat | | Interpon APP120 + Liquid PU topcoat | |
|---|---|---|---|---|---|
| Primer to bake | | Interpon APP120 | | Interpon APP120 | |
| Minimum temperature of the parts | | 130°C | | 160°C | |
| Maximum temperature of the parts | | 220°C | | 220°C | |
| Maximum oven ambiance temperature | | 220°C | | 220°C | |
| Curing conditions | Parts temperature | Minimum time | Maximum time | Minimum time | Maximum time |
| | 130°C | 10 min (green cure) | 60 min (green cure) | *Not applicable* | *Not applicable* |
| | 160°C | 10 min | 60 min | 10 min | 60 min |
| | 170°C | 8 min | 50 min | 8 min | 50 min |
| | 180°C | 7 min | 40 min | 7 min | 40 min |
| | 200°C | 5 min | 30 min | 5 min | 30 min |
| | 220°C | 3 min | 10 min *(maximum)* | 3 min | 10 min *(maximum)* |

**For use as a holding primer**

| System | | Interpon APP120 + Powder topcoat system | | Interpon APP120 + Liquid PU topcoat system | |
|---|---|---|---|---|---|
| Primer to bake | | Interpon APP120 | | Interpon APP120 | |
| Minimum temperature of the parts | | 160°C | | 160°C | |
| Maximum temperature of the parts | | 220°C | | 220°C | |
| Maximum oven ambiance temperature | | 220°C | | 220°C | |
| Curing conditions | Parts temperature | Minimum time | Maximum time | Minimum time | Maximum time |
| | 160°C | 10 min | 60 min | 10 min | 60 min |
| | 170°C | 8 min | 50 min | 8 min | 50 min |
| | 180°C | 7 min | 40 min | 7 min | 40 min |
| | 200°C | 5 min | 30 min | 5 min | 30 min |
| | 220°C | 3 min | 10 min *(maximum)* | 3 min | 10 min *(maximum)* |

For best adhesion between the topcoat and primer we recommend green cure of primer followed by immediate powder topcoat application. The primer should be cured in a convection oven, optionally with infra-red heaters, with air temperature not exceeding 220˚C.

***Note**: Failure to comply with the recommended curing conditions may affect the adhesion of the topcoat and cause degradation of the coating properties of the system. Parts coated with **Interpon APP120** should be handled carefully avoiding any surface contamination.*

**Topcoat Application**

**Interpon APP120** should ideally be overcoated within 24 hours of application. However the overcoating could be done up to 6 weeks after application and if needed with preliminary cleaning. To ensure the integrity of the **Interpon APP120** powder system, as well as optimum performance, the whole system must be cured in accordance with the recommended curing conditions of the powder topcoat. When used as a holding primer, before overcoating the primer should be cleaned. Remove dust by blowing with clean, dry air and/or brush with a soft brush.
For overcoating with a liquid PU topcoat Interpon APP120 must first undergo light dry sanding with 800 grade sandpaper.

**Damage Repair**

Any damage to the Interpon APP120 system must be repaired as soon as possible.

**Surface preparation**

Damaged areas must be clean and free of grease or rust. Dry-sand the area with 600 grade paper down to the substrate. The area must be completely free of dust and cleaned with a non-aggressive solvent before proceeding.

**Application**

For repairs, we recommend the following two-coat liquid paint system from International Protective Coatings & Cromadex.

**1st Coat:** two-pack acid etch primer

**2nd Coat:** two-pack polyurethane topcoat Interthane 990 or Cromadex 600

*Product datasheets for these products can be obtained from International Protective Coatings at Felling (Tel: +44 (0) 191 469 6111) or the local office. For your nearest Cromadex centre, visit cromadex.com.*

**Safety Precautions**

Please consult the Material Safety Datasheet (MSDS)

**Disclaimer**



http://www.interpon.com/contact-us/


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## Appendix

**Table 1**: **Varying preparation/pre-treatment methods and resultant test data.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Film Thickness: | | Interpon APP120: 60-80µ Interpon D1036: 60-80µ | | | | | |
| | | | | | | | |
| Curing Times: | | (Object temp @200ºC) Interpon APP120: 2 minutes Interpon D1036: 10 minutes | | | | | |
| | | | | | | | |
| Pre-treatment: | | Solvent degrease<br>Blast clean to SA2½<br>Profile: 50-75µ, (Ra 6-12µ) | | Alkaline degrease<br>Zinc Phosphate<br>Water rinse and dry | | Alkaline degrease<br>Iron Phosphate<br>Chromate passivation<br>Water rinse and dry | |
| | | | | | | | |
| | | ***Ave. Creep*** | ***Max Creep*** | ***Ave. Creep*** | ***Max Creep*** | Ave. Creep | Max Creep |
| NSS | - 3000 hours | 5.0mm | 9.0mm | 0.5mm | 1.0mm | 2.0mm | 3.0mm |
| | - 5000 hours | 8.0mm | 17.0mm | 3.5mm | 7.0mm | --- | --- |
| | | | | | | | |
| GM * Cyclic | - 10 cycles* | 0.5mm | | 0mm | 0.5mm | 1.0mm | 2.5mm |
| | - 15 cycles* | 1.5mm | 3.0mm | 1.5mm | 3.0mm | --- | --- |
| | | | | | | | |
| Natural † Exposure | - 10 months | --- | --- | 2.5mm | 4.0mm | --- | --- |
| | - 18 months | 2.0mm | 3.0mm | --- | --- | --- | --- |

*GM Cyclic testing according to GME 60206 consists of the following: Hot Neutral Salt Spray (5% Na Cl) @ 35ºC According to ISO7253: 24 hours ) Humidity - 40ºC, 100% RH: 96 hours ) = 1 cycle Ambient - 23ºC, 50% RH: 48 hours )

Table 2: Additional test data – NSS result over blasted steel with iron phosphate pre-treatment.

| | | | |
|---|---|---|---|
| Film thickness: | | Interpon APP120: 60 - 80µ<br>Interpon D1036: 60 - 80µ | |
| | | | |
| Curing times:<br>(Object temp @ 200ºC) | | Interpon APP120: 2 minutes<br>Interpon D1036; 10 minutes | |
| | | | |
| Pre-treatment: | | Solvent degrease<br>Blast clean to SA2½<br>Profile: 50-75um, (Ra 6-12µ)<br>Iron Phosphate<br>Water rinse and dry | |
| | | | |
| | | Ave. Creep | Max Creep |
| NSS | - 1000 hours | 1.0mm | 2.0mm |
| | - 3000 hours | 2.0mm | 3.0mm |