



Jiangsu Yoke Technology



PhireGuard ELF-606

Marketing Presentation

PhireGuard ELF-606 Characteristics

- Chlorinated Diphosphate Esters
- Extremely low Fogging and VOC's
- Compatible with slabstock and molded foams
- No impact on reaction profile and processability
- Miscible in polyol blends
- Enhanced fire properties over wide range of foam density
- Offer durable Fire Protection

PhireGuard ELF-606 Key Properties

- Appearance: Clear Liquid
- Viscosity: # 1800 mPa.s
- Phosphorus Content > 9.2 wt%
- Chlorine Content > 31.5 wt%
- Acidity: < 0.2 mgKOH/g
- Water Content: < 0.1 wt%
- Colour APHA: < 100
- OH value (Water and Acid excluded): 0 mgKOH/g
- Non Reactive

PhireGuard ELF-606 Value Proposition

- Latest Development of the “V6” technology
- Extremely low level of TCEP, i.e. < 1000 ppm
- Enhanced Emission (VOC’s, Fogging) performance
- Compatible with most Fire Safety Standards:
 - BS 5852 Crib 5
 - Cal TB 117
 - UL-94
 - FMVSS
- High molecular weight, non “fugitive” FR, meaning that ELF-606 provide the flexible PU foam with durable fire protection

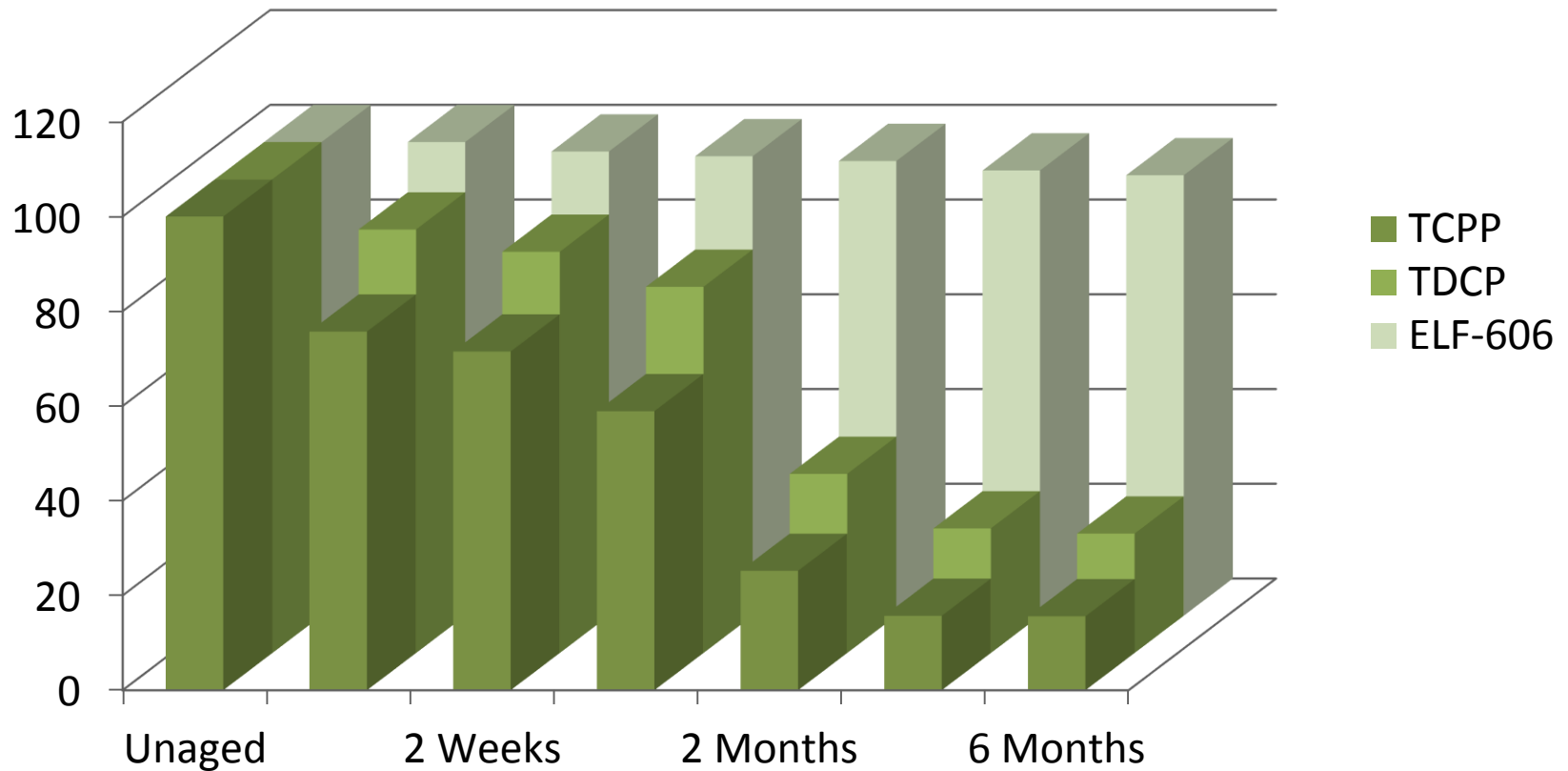


Typical formulations based on PhireGuard ELF 606

<i>Foam density</i>	30 kg/m ³	35 kg/m ³
FMVSS 302, SE rating	5-6 php	4-5 php
Cal TB 117 A	7-8 php	6-7 php
BS 5852 Crib 5	11 php + 21 php Mel	9 php + 18 php Mel

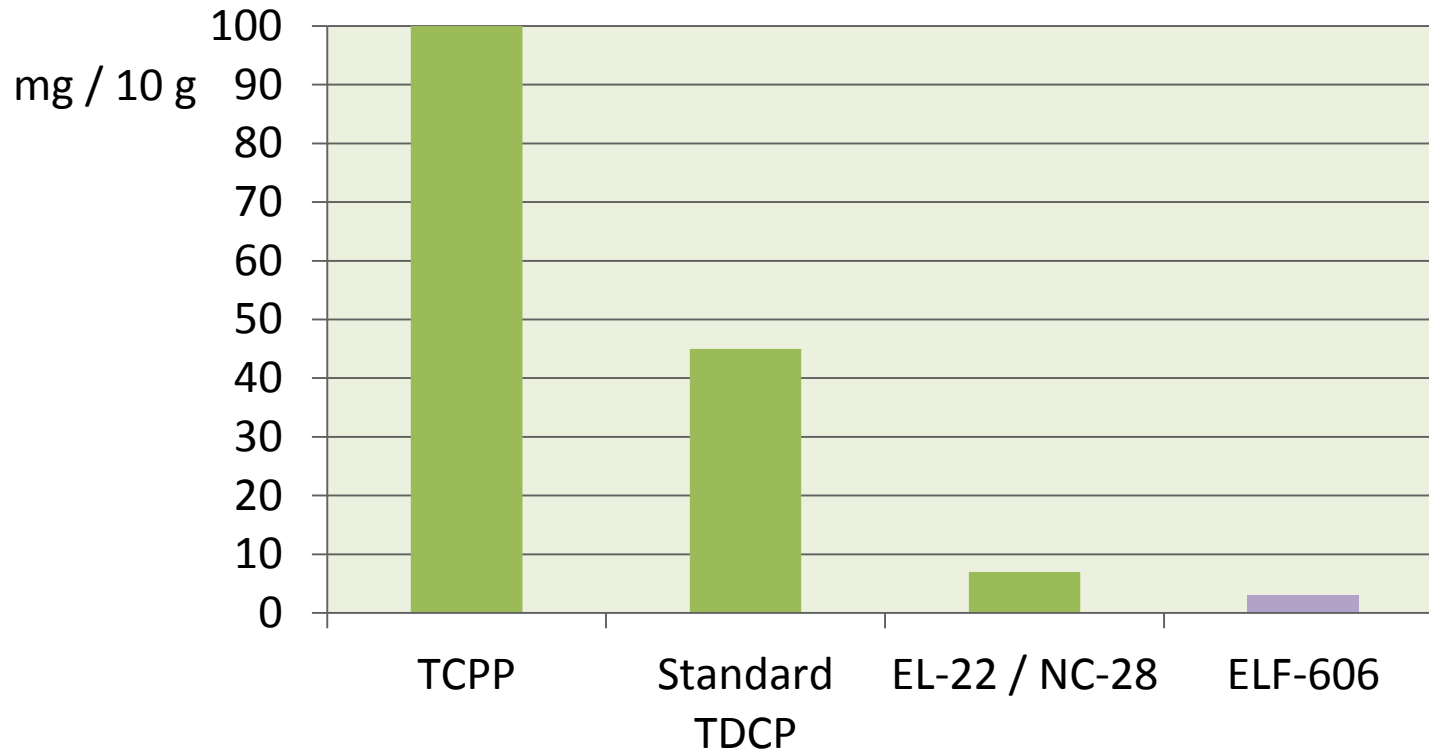
PhireGuard ELF's are non fugitive

% Phosphorous retention at 70 deg C, measured by P -NMR.

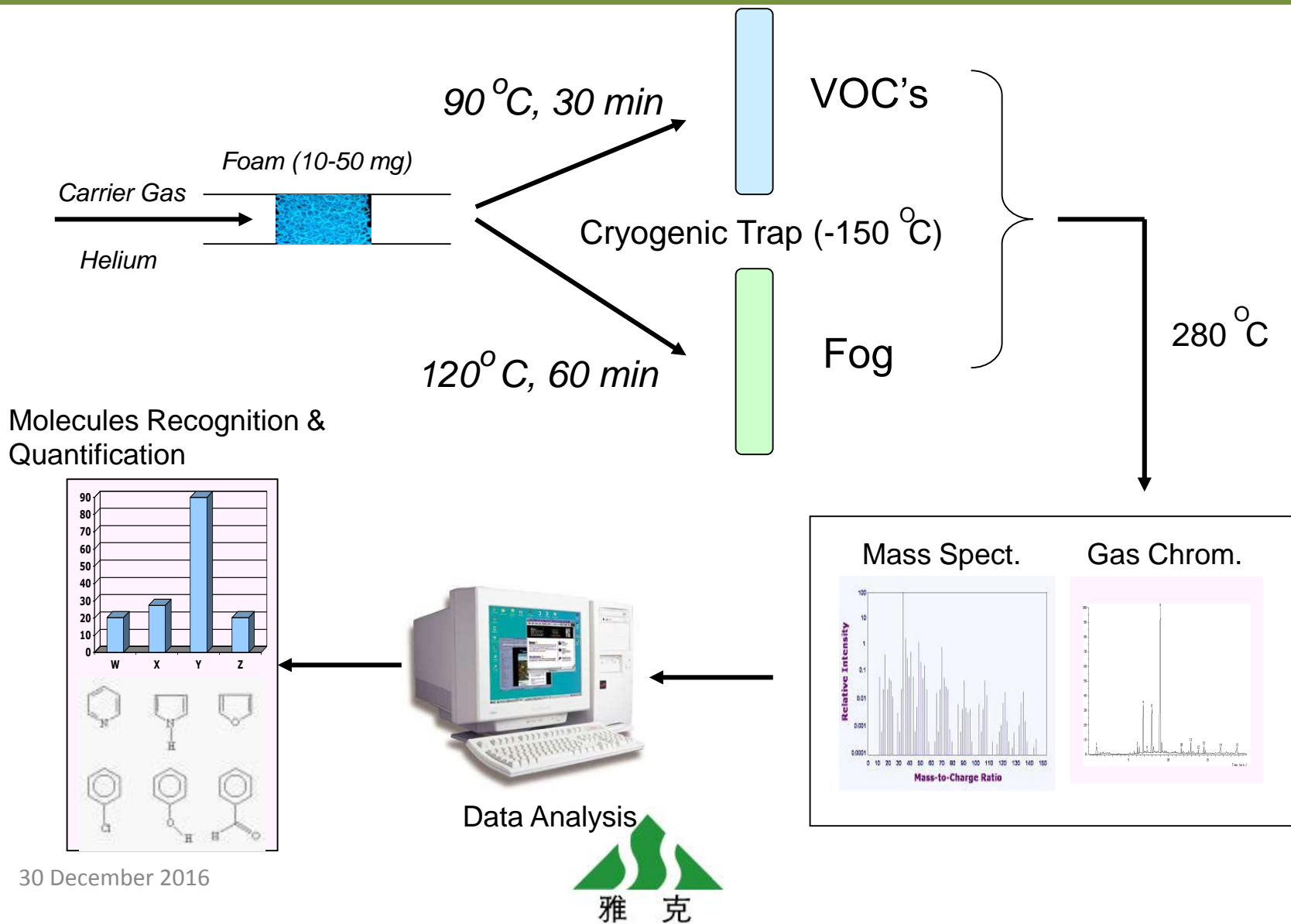


PhireGuard ELF-606 Fogging Performance

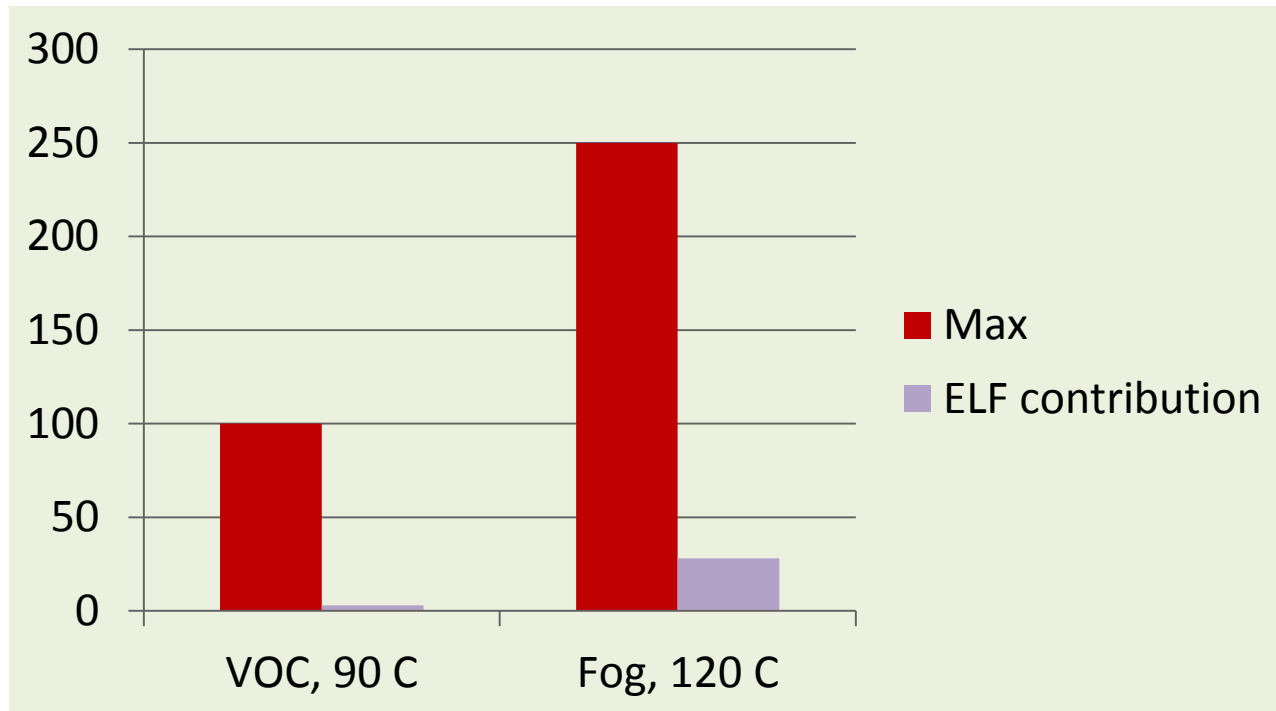
DIN B-75201, 120 deg C, 24 hours



VDA 278 VOC's / Fog Test



ELF-606 VDA 278 Performance



- PhireGuard ELF-606 hardly contributes to the foam VOC emission
- Very limited contribution to the Fogging (# 30 ppm), which gives to the Foamer a wide formulation latitude whilst still remaining below the 250 ppm

PhireGuard 606 Summary



Chlorinated
DiPhosphate
Ester

Processability,
Limited Impact
on Foam
Properties

Superior FR
Performance

Best Emission
(VOC's,
Fogging
Performance).

The top
Class FR
family



One more thing...

- PhireGuard ELF-606 belongs to the new class of Flame Retardants that the Jiangsu Yoke Technology Corporation has recently launched on the market.
- The PhireGuard tradename is associated with Innovation, Quality Consistency and Cost in Use Efficiency

