

2026

Flame Retardant Solutions

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Flame Retardant Solutions

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Flame Retardant APPLICATION GUIDE

Used for ABS or HIPS

fire ratings - V0

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G'sal®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
Brominated Epoxy Resin	68928-70-1	BEB6000; CXB 2000H	Brominated Epoxy Resin 13.5-14% +ATO 4% + 0.2% PTFE	Low Cost with High UV performance Injection 1.6mm min.
DBDPE	84852-53-9	Saytex 8010; Firemaster-2100R FR-1410	DBDPE 12% +ATO 4% +0.2% PTFE	No noticeable Characteristics Injection 1.6mm min.
FR-245	25713-60-4	FR-245; BTAC-245; SR-245	FR-245 12-14% +ATO 3.5-4% +0.2% PTFE	High Compositive performance Injection 1.6mm min.
TBBA	79-94-7	Saytex CP-2000; BA-59P; FR-1524	TBBA 13.5-14% +ATO 4% +0.2% PTFE	Low Cost Injection 1.6mm min.

HB

The lowest fire rating in the UL94 flammability standard. It is required that for specimens with a thickness of 3-13mm, burn rate should be less than 40mm per minute; and for specimens with a thickness of less than 3mm, burn rate is less than 70mm per minute, or flame is extinguished before the 100mm mark.

V-2

After two 10-second burning tests are performed on the specimen, the flame is extinguished within 30 seconds, and able to ignite the cotton wool located 30cm below.

V-1

After two 10-second burning tests are performed on the specimen, the flame is extinguished within 30 seconds, and unable to ignite the cotton wool located 30cm below.

V-0

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Flame Retardant

APPLICATION GUIDE

Used for

PA6/PA66/PA46

fire ratings - V2/V1/V0



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FR grade	G'sal®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
V1-V0	BPS	88497-56-7	Saytex HP-3010; Saytex HP-7010; FR-803P	BPS 14-16% + ATO 5% + 0.2% PTFE(for PA6) BPS 18-20% + ATO 6-7% + 0.2% PTFE(for PA66) BPS 18-20% + ATO 6-7%(for PA46)	High Flame Resistance Injection 1.6mm min.
V1-V0	DBDPE	84852-53-9	Saytex 8010; Firemaster-2100R FR-1410	DBDPE 13-16% + ATO 5% + 0.2% PTFE	///
V2-V1	MCA	37640-57-6	Melapur MC8/15/25/50	MCA 17-25% add GF or add MH as filler	Halogen Free Injection 1.6mm min.
V1-V0	MPP	218768-84-4	Melapur 200	MPP 25-28% with GF(for PA6) MPP 25-28% with GF(for PA66)	Halogen Free Injection 1.6mm min.
V1-V0	HF-513B	///	///	HF-513B 16-18% with GF(for PA6) HF-513B 18-20% with GF(for PA66)	Halogen Free Injection 1.6mm min.



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Flame Retardant APPLICATION GUIDE

Used for PBT and PET

fire ratings - V0

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G'sat®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
BC58	71342-77-3	BC58	BC58 12-13% +ATO 4% + 0.2% PTFE	High UV performance Injection 1.6mm min.
Brominated Epoxy Resin	68928-70-1	BEB6000; CXB 2000H	Brominated Epoxy Resin 13-14% +ATO 4% +PTFE	Light Color Injection 1.6mm min.
BT-93W	32588-76-4	Saytex BT-93W	BT-93W 14% +ATO 4% + 0.2% PTFE (for PBT) BT-93W 14-16% +ATO 4% + 0.2% PTFE (for PET) BT-93W 18-20% +ATO 5-6% (for PET)	High UV performance Injection 1.6mm min.
BPS	88497-56-7	Saytex HP-3010; Saytex HP-7010; FR-803P	BPS 14-16% +ATO 4% + 0.2% PTFE	Normal Injection 1.6mm min.
DBDPE	84852-53-9	Saytex 8010; Firemaster-2100R; FR-1410	DBDPE 9-11% +ATO 4% +0.2% PTFE Anti-Dripping Agent	Low Cost Injection 1.6mm min.
FR-1025	59447-57-3	FR-1025	FR-1025 10-12% +ATO 4% + 0.2% PTFE	Super Thin products Injection 1.6mm min.
FR-245	25713-60-4	FR-245; BATC-245; SR-245	FR-245 13-14% +ATO 4% + 0.2% PTFE	Normal Injection 1.6mm min.

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Flame Retardant

APPLICATION GUIDE

Used for PC/ABS Alloy

fire ratings - V0



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G'sal®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
BC58	71342-77-3	BC58	BC58 10-12% + ATO 3%.(for ABS) BC58 8-10% Not ATO; Px220 with Dosage 2-3% (for PC)	No noticeable Characteristics Injection 1.6mm min.
BDP	5945-33-5	NcendX P-30; Reofos BAPP; Fyrolflex BDP	BDP 12-14%(for ABS) BDP 12-14%(for PC)	Halogen Free Injection 1.6mm min.
Brominated Epoxy Resin	68928-70-1	BEB6000; CXB 2000H	Brominated Epoxy Resin 13-14% +ATO 4% + 0.2% PTFE(for ABS)	No noticeable Characteristics Injection 1.6mm min.
FR-245	25713-60-4	FR-245; BATC-245; SR-245	FR245 10-13% + ATO 3%(for ABS) FR245 10% + PX220 as Synergist with dosage 2-3%(for PC)	Normal Injection 1.6mm min.
RDP	57583-54-7	Reofos RDP; Fyrolflex RDP	RDP 12-14%(for ABS) RDP 12-14%(for PC)	Halogen Free Injection 1.6mm min.
TBBA	79-94-7	Saytex CP-2000; BA-59P; FR-1524	TBBA 13.5-14% + ATO 4% + 0.2% PTFE(for ABS) TBBA 13.5-14% + ATO 4% + 0.2% PTFE(for PC)	Low Cost Injection 1.6mm min.



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Flame Retardant APPLICATION GUIDE

Used for Polycarbonate(PC)

fire ratings - V0

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FR grade	G'sal®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
V0	BC58	71342-77-3	BC58	BC58 6-8%	Transparency Injection 1.6mm min.
V0	Fluorine Sulfonate	///	///	Fluorine Sulfonate 0.2% +0.2% PTFE	Halogen Free Injection 1.6mm min.
V0	Fluorine Sulfonate	///	///	Fluorine Sulfonate 0.2% +0.2% Organic Silicon as Synergist	Halogen Free Injection 1.6mm min.

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Flame Retardant

APPLICATION GUIDE

Used for Polypropylene(PP) Polyethylene(PE)

fire ratings - V2/V1/V0



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FR grade	G'sal®FR	Cas No.	Equivalent	Recommend Dosage	Products Feature
V2	BDDP	21850-44-2	PE-68; FR-720	BDDP 8% + ATO 2.5-3% + Inorganic filler (French Chalk, Ca ₂ CO ₃ , BaSO ₄ etc 15-35%)	High Flame Resistance Injection 1.6mm min.
V2	DBDPE	84852-53-9	Saytex 8010; Firemaster-2100R; FR-1410	DBDPE 12-14% + ATO 4-5% + Inorganic filler (French Chalk, Ca ₂ CO ₃ , BaSO ₄ etc 15- 25%)	Enviroment Friendly Injection 1.6mm min.
V2	HFNP-1100 Series	///	///	HFNP-1100 Series 20-24%	Halogen Free Injection 1.6mm min.
V1-V0	BT-93W	32588-76-4	Saytex BT-93W	BT-93W 18-20% +ATO 6%	High UV performance Film Products.
V0	DBDPE	84852-53-9	Saytex 8010; Firemaster-2100R; FR-1410	DBDPE 18-20% + ATO 6% + Inorganic filler (French Chalk, Ca ₂ CO ₃ , BaSO ₄ etc 15-25%)	Enviroment Friendly Injection 1.6mm min.



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**Expanded Polystyrene (EPS)
and Extruded Polystyrene (XPS)****G'sal®FR FR-130X**

Product Name:	1,1'-(isopropylidene)bis[3,5-dibromo-4-(2,3-dibromo-2-methylpropoxy)benzene] [FR-130X]
Equivalent Name:	DKS PYROGUARD SR-130
Cas No.:	97416-84-7
Molecular Weight:	971.67
Molecular Formula:	$C_{23}H_{24}Br_8O_2$
Application:	Used in Expanded Polystyrene (EPS) and Extruded Polystyrene (XPS). Most economical alternative to HBCD.

More info pls email sales@oceanchem-group.com

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Flame Retardant

APPLICATION GUIDE

Used for
Acrylonitrile Butadiene Styrene (ABS)
Polybutylece Terephthalate (PBT)
Polyamide 6 (PA6)



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G'sal^oFR TR-580

Product Name:
Application:

Flame Retardant Synergist TR580

It covers almost all common plastics, engineering plastics, high temperature plastics, amorphous plastics, etc.

It is the best substitute for bromine antimony products, more environmental-friendly and safer.

100% replacement of antimony trioxide. Its unique structure effectively blocks gases to achieve flame retardant synergy, promotes carbonization density and strength, and has low smoke and dripping inhibition effects.

Recommended Dosage: 1-6 % of the total amount.

More info pls email sales@oceanchem-group.com



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Used for Polyurethane(PU)

G'sal®FR	Cas No.	Equivalent	DESCRIPTION & USES
FR-504L Chlorinated Phosphate ester mixture	52186-00-2 & 184530-92-5	CR504L	Exhibits low volatility and is used on all varieties of polyurethane resin such as flexible polyurethane foam, elastomers, and paint.
FR-HF-4 Butylated triphenyl Phosphate esters	///	///	Exhibits low volatility and low discoloration. used in Automotive FMVSS302 and furniture California Technical Bulletin 117 flammability tests. Foams containing this product exhibit esters yellow clear Liquid good compression set and IFD properties.
TCPP Tris(1-chloro-2 propyl) Phosphate	13674-84-5	TCPP; Levagard PP; Aceto TCPP	Less acid value and high hydrolytic stability compared with TCEP. Flame retardant for PVC, polyurethane foam, polyester and epoxy resins.
TDCPP 1,3-Dichloro-2-propanol Phosphate	13674-87-8	Rohdia Antiblaze TCDP/LV, 195	Flame Retardant for Flexible PU foams such as mattress, pillow and sofa. Also used in epoxy resins, phenolics and unsaturated polyester resins.
FR-HF-6 Diethyl bis (2-hydroxyethyl) Aminomethyl Phosphonate	2781-11-5	Fyrol 6	Flame retardant for PU rigid foams, PF resins, EP resins and UP resins
TEP Triethyl Phosphate	78-40-0	TEP; Phosphoric Ether	Flame retardant for rigid polyurethane foam, unsaturated polyester, adhesives, coatings and textiles.
TCP Tricresyl Phosphate	1330-78-5	Kronitex TCP; Disflamoll TKP; Rhodia TCP	It is an additive Flame Retardant Plasticizer used in Flexible PU foams, It can be recommended as Flame Retardant for Synthetic Rubber, PVC, Polyester, Polyolefin and Plasticizer or FR Tricresyl Phosphate yellow clear Liquid Plasticizer for Vinyl Resin, Nitrocellulose, Butyl Rubber and Chloroprene Rubber.
CDP Cresyl Diphenyl Phosphate	26444-49-5	Kronitex CDP; Disflamoll DPK	It is a Phosphate Flame Retardant Plasticizer used in Engineered Resins. It is also recommended for Flexible PVC, PVB, Chloropolyethylene, Natural or Synthetic Rubber, as well as for Flexible PU foams.

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Flame Retardant

APPLICATION GUIDE

Used for Polyvinyl Chloride(PVC)



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G'sa [®] FR	Cas No.	Equivalent	DESCRIPTION & USES
ZB35 Zinc Borate	12767-90-7	ZB-467; Firebrake ZB	It is used as a flame retardant, smoke and afterglow suppressant, and anti-arcing agent in polymer systems such as Polyvinyl Chloride (PVC), Polyamides (PA), Polypropylene (PP), Polyethylene (PE), Epoxy, Polyesters, Elastomers and Rubbers.
IPPP Triaryl Phosphate Isopropylated	68937-41-7	Reofos 35/50/65/95	Used in PVC, fiber resin, synthetic rubber, pressure oil fields.
CDP Cresyl Diphenyl Phosphate	26444-49-5	Kronitex CDP; Disflamoll DPK	It is a Phosphate Flame Retardant Plasticizer used in Engineered Resins. It is also recommended for Flexible PVC, PVB, Chloropolyethylene, Natural or Synthetic Rubber, as well as for Flexible PU foams.

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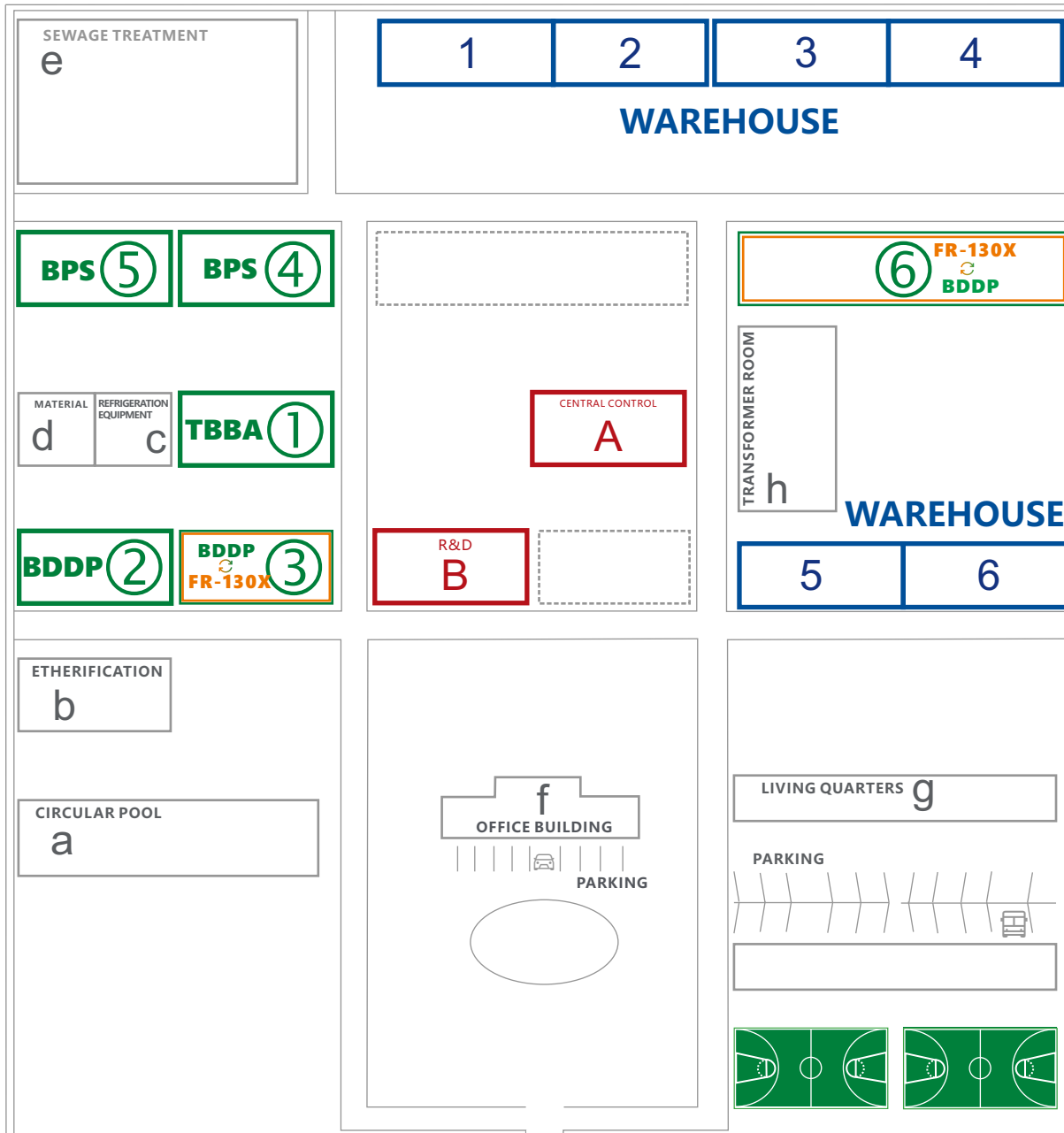
375m

Bohai Road

Changliang Road

528m

Huanghai Road



WAREHOUSE

- 1 BPS HP7010/HP3010
- 2 BDDP HP-800; PE-68; FR-720
- 3 BPS HP7010/HP3010
- 4 TBBA CP2000; BA-59P; FR-1524
- 5 FR-130X SR-130
- 6 FR-130X SR-130

WORKSHOP

- ① TBBA CP2000; BA-59P; FR-1524
- ② BDDP HP-800; PE-68; FR-720
- ③ FR-130X/BDDP SR-130/PE-68; FR-720
- ④ BPS HP7010/HP3010
- ⑤ BPS HP7010/HP3010
- ⑥ FR-130X/BDDP SR-130/PE-68; FR-720

SUPPORTING

- a CIRCULAR POOL
- b ETHERIFICATION
- c REFRIGERATION EQUIPMENT
- d MATERIAL
- e SEWAGE TREATMENT
- f OFFICE BUILDING
- g LIVING QUARTERS
- h TRANSFORMER ROOM

OTHERS

- A CENTRAL CONTROL
- B R&D

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