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# tris chlorophosphates

## European Union's Comprehensive Evaluation

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# Risk Assessments of Flame Retardants

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## Chlorophosphate FRs

- Tris (2-monochloropropyl) phosphate (TCPP)
- Tris (2,3-dichloroisopropyl) phosphate (TDCP)
- Tris (2-chloroethyl) phosphate (TCEP)
- 2,2-bis (chloromethyl)trimethylene bis phosphate (bis(2-chloroethyl) phosphate)

## Brominated FRs

- Pentabromodiphenyl oxide (PBDE)
- Octabromodiphenyl oxide (OBDE)
- Decabromodiphenyl oxide (DBDE)
- Hexabromocyclododecane (HBCD)
- Tetrabromobisphenol-A (TBBPA)
- Ethane bis(pentabromophenyl) (EBP)

 Risk Assessment by EU authorities

 Risk Assessment by EU national authorities

## Phosphorus FRs

- Tris(isopropylphenyl) phosphate
- Phenyl, isopropylated, phosphate
- Terbutyl phenyl diphenyl phosphate
- Phenol, isobutylated phosphate
- Butylated triphenyl phosphate diethylhexyl diphenyl phosphate
- Isodecyl diphenyl phosphate
- Isopropyl phenyl diphenyl phosphate (IPPP)
- Phosphoric acid, (1-methylethyl) phenyl phenyl ester
- Triphenyl phosphate (TPP)
- Tricresyl phosphate (TCP)
- Tetraphenyl resorcinol diphosphate
- Cresyl diphenyl phosphate (CDP)
- Trixylenyl phosphate (TXP)

# EU Risk Assessments – Flame Retardants

## Risk Assessments updates

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Flame retardants have already been through an official EU risk assessment under regulation 793/93 (EC).

Risk assessment conclusions are recognised by REACH.

**No restriction for 2 of the 3 substances**  
**1 substance classified as CMR cat. 1-2**

P/Cl	<b>T CPP</b>	Finalized in 2008	No restriction on use
	<b>T DCP</b>	Finalized in 2008	No restriction on use
	<b>T CEP</b>	REACH transitional system	CMR cat. 1-2 (REACH Authorization)

T CPP = tris(2-chloro-1-methylethyl) phosphate

T DCP = tris[2-chloro-1-(chloromethyl)ethyl] phosphate

T CEP = tris(2-chloroethyl) phosphate

# European Union (EU) Regulatory Activity

## REACH - Authorization

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- Substances targeted by authorization are Substances of Very High Concern (SVHCs):

**CMR**  
(Carcinogen,  
Mutagen, Reprotoxic)  
cat. 1 and 2

**PBT**  
(Persistent,  
Bioaccumulative,  
and Toxic)

**vPvB**  
(very Persistent  
and very  
Bioaccumulative)

**Substances with  
equivalent concern**  
(e.g. endocrine  
disruptors)

- The Authorization process comprises three stages:

**Identification**  
of SVHC (Candidate list)  
Triggers notification and  
communication obligations

**Inclusion**  
of candidate substances in  
the list of substances subject  
to authorization (Annex XIV)

**Decisions**  
on applications  
for authorization  
(ban or restrict)