

SABIC's input to the public consultation Comments to Annex XV PFAS restriction proposal

to:

Question number 6: Missing uses – KPBS as a Flame retardancy Additive in Flame Retarded Engineering Thermoplastics (ETP) for e.g. critical Industries and applications.

Executive Summary

Flame retardant engineering thermoplastics (FR ETPs) designed for thin wall (thickness <3.0 mm) in e.g. consumer electronics and electrical applications play a critical role in consumer safety as per European norms like EN5110. FR ETP's need to be inherently tough materials to provide device integrity during and after an impact event, so the device continues to function, and does not produce an electrical hazard (short circuit, shock hazard) or a fire hazard throughout its lifetime; e.g. electronic >3 yrs, electrical >10 yr. Because these plastics are inherent insulators, they provide a significant reduction in electrical shock resistance when used in the assembly of powered devices. By increasing ignition resistance, these materials help prevent injuries and property damage by lowering the probability of a, potentially catastrophic, fire event. If a flame event does occur, they help to minimize damage, injuries and/or casualties by reducing flame spread risks that will allow e.g. individuals more time to escape a fire.

In addition to product safety advantages, these FR ETPs offer design freedom, part- and function integration and weight saving versus conventional materials such as metals and glass and reduce the amount of material used and amount of plastic waste produced during manufacturing and at the electronic devices' end of life. Thinner walls can lead to thinner, lighter products, resulting in lower overall CO2 footprint. Lighter products use less energy during transport, which can lead to significantly less CO2 produced over their lifetime.

KPBS based FR is needed to maintain thin wall flammability (<3.0 mm) while preserving electrical safety performance, thereby enabling waste reduction and other environmental benefits.

Given the absence of commercially available effective alternatives, time is needed to qualify new alternatives in production and certify by relevant notified bodies and lengthy specification processes at end-users (tiers and OEMS), we feel it would be appropriate to allow for a 12-year derogation to have sufficient time to invent new materials or develop viable alternatives.

Substance information

Substance Name: Potassium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonate

Synonyms: KPBS or Rimar Salt

Molecular formula: C₄HF₉O₃S.K

EC Name: 249-616-3

CAS number: 29420-49-3

Critical uses

As a Flame retardancy Additive in Flame Retarded Engineering Thermoplastics (ETP) for e.g. critical Industries applications but not limited to:

Electronics

Consumer Electronics

Computers / Notebook / Desktop

Charger / Adaptor

Game Console

MCB Miniature Circuit Board holders

Industrial Electronics

Telecom infrastructure

Telecom 5G (radomes)

Security systems

Fire protection automated systems

(Process) Automation enclosures

Electrical

Electrical distribution

Utilities (smart) Meters (e.g. Electrical, Gas, Water)

PV Inverters

Junction boxes

Conduits or cable channels

Electrical Components

Enclosures

Switches / Sockets

Circuit breakers

Connectors

Controls (Frequency controllers)

Lighting (LED)

Lenses

Reflectors

Housing

LED drivers

Energy Storage

Battery pack and internal components

Battery enclosure

Cell holders

EV Supply Equipment

EV Charger parts and/or enclosure