

## RP 65

**RP 65** (perfluorobutane sulfonic acid potassium salt) is a very effective flame retardant for polycarbonate. It shows high efficiency at very low concentration and excellent thermal stability, with a negligible weight loss up to 400 °C.

Due to its properties and low percentage of utilization, at a level of ppm, **RP 65** does not affect the chemical and physical characteristics of PC, such as visual aspect and optical brightness.

Therefore it is particularly suitable for the use in transparent PC, other than in pigmented one.

For these characteristics, **RP 65** is widely used as a valid alternative to the traditional brominated additives.



**Description:** nonafluoro-1-butane sulphonic acid potassium salt  
*perfluorobutane sulfonic acid potassium salt*  
(CAS 29420-49-3)

### MAIN TYPICAL PROPERTIES

<b>Appearance:</b>	white powder
<b>Bulk Density at 20 °C:</b>	0,690 g/mL
<b>pH (water solution 5%):</b>	4,5 – 6,5
<b>Melting point:</b>	300 °C min
<b>Chemical and thermal stability:</b>	> 400 °C
<b>Solubility in water at 25°C:</b>	510 g/l
<b>Purity:</b>	98% min
<b>Moisture:</b>	0,5% max
<b>Fluorides (as KF):</b>	0,15% max
<b>Suggested % of utilization:</b>	750-1000 ppm

### PACKAGING

Kraft card board drums of 25 kg net each

#### DISCLAIMER

All data contained in this document are based on our best available knowledge and given in good faith for the indicated applications. Given the variety of formulations and operative conditions, no liabilities can be issued for an incorrect and unsafe use of the product. Please also refer to the safety datasheet (MSDS) for any further information regarding this product.

# CHEMWELL Bvba

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## USES

**RP 65** can be used in concentrations of 0,05-0,12 wt% with usual additives, such as fillers, reinforcing agents, heat stabilizers, mould releasing agents, fluxes, antistatics as well as synergistic flame retardants (PTFE powder, TBBA, siloxanes).

Thanks to a thinner particle size distribution **RP 65** is easier to disperse within the PC resin and could solve some processing issues faced during the extrusion.

This could be an important advantage especially if the final application is for very thin films/sheets of PC (usually < 1.6 mm).

## PROCESSING CONDITIONS

Due to the low amount of this flame retardant in PC formulations, a good homogenization is very important. Otherwise undesired side effects like reduced MFI, loss of transparency, hazing and the like may occur. Therefore, it is strongly recommended to produce a pre-mix or masterbatch by using known mixing and melting techniques.

For this purpose the raw materials containing approx. 4 wt% of **RP 65** and PC can be mixed in a tumbler or Henschel mixer and then melted at temperatures shown below.

Alternatively, the raw materials can be fed directly into the feed section of a melt mixing device (such as an extruder) via separate feed systems and subsequently melt kneaded and extruded as pellets.

As an example, **RP 65** is introduced into a twin extruder through a (cooled) side chain at a temperature of approx. 260°C, the total flux being in the order of 20 kg/hr.

After cooling and drying the masterbatch can be mixed with the desired proportion of PC and introduced into the extruder through the main chain, the barrel temperature profile ranging from 270°C to 250°C.

With PC blends temperatures must be adapted corresponding to the nature of the blending polymers.

Following the process as described above, UL94 V0 should be reached for sheets from 1,6 mm to 3,2 mm and more.

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