

# Citric Acid monohydrate

## Feed grade

### Identification

Chemical name:	Citric acid monohydrate	CAS-No:	5949-21-1
Chemical formula:	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub> • H <sub>2</sub> O	EC no:	200-662-2
Molecular weight:	210,08 g/mol		

### EC Registration

Feed Additive:	Ref. Community Reg. of Feed Additives, (EC) No 1831/2003 of 22 Sept. 2003
Additive reg.:	1a E330 Citric acid

### Specification, nutrients

Additive/nutrient	Content	Analytical method
Citric acid anhydrous	> 91,0 %	
Water	< 8,5 %	

### Physical specifications

Composition:	
Appearance:	Free fluent granules/powder. Non hygroscopic.
Partikel size:	0,1 – 0,85 mm: > 90% of particles
Shelf life:	Min. 12 months left at date of delivery.
Certificate:	Certificate of analysis on each batch in every delivery.

### Undesirable substances

Compliance with EU Directive 2002/32/EC.

Substance	Max. content	EU legislation	Comment
Arsenic	1,2 ppm	2 ppm	
Cadmium, Cd	0,6 ppm	1 ppm	
Lead, Pb	7 ppm	10 ppm	
Mercury, Hg	0,06 ppm	0,1 ppm	
Dioxins, PCDDs and PCDFs <sup>1)</sup>	0,5 ng/kg	0,75 ng/kg	WHO-PCDD/F-TEQ/kg <sup>4)</sup>
Dioxin-like PCBs <sup>2)</sup>	0,35 ng/kg	0,5 ng/kg	WHO-PCDD/F-PCB-TEQ/kg (ppt) <sup>4)</sup>
Non dioxin-like PCBs <sup>3)</sup>	6 µg/kg	10 µg/kg	ICES – 6 <sup>4)</sup>

<sup>1)</sup> Dioxins: Sum of polychlorinated dibenzo-*para*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs)

<sup>2)</sup> Dioxin-like PCBs: Polychlorinated biphenyls (PCBs). WHO-TEFs (toxic equivalency factors), 2005

<sup>3)</sup> Sum of PCB 28, PCB 52, PCB 101, PCB 138, PCB 153 and PCB 180

<sup>4)</sup> Upper-bound concentrations. Relative to a feed with a moisture content of 12 %