

Form Product Specification Natural Caffeine Powder



Producer / Distributor	CR3 Kaffeeveredelung M. Hermsen GmbH Waterbergstraße 14 D-28237 Bremen, Germany																		
Product Code	Natural Caffeine, anhydrous, pure																		
Origin	Coffea Arabica and Coffea Canephora var. Robusta																		
Product Description	By-product, results from the decaffeination of green coffee beans (seed of coffee tree, Coffea L. ssp.). The extracted raw caffeine is refined to pure caffeine by subsequent processing steps. The result is a fine white odourless powder. The product has food grade. The product complies with the caffeine monographs of the United States Pharmacopeia (USP), the Food Chemical Codex (FCC), the Japanese Pharmacopeia (JP) and the European Pharmacopeia (EP).																		
Information about the manufacturing process	CR3 conducts treatment processes on green coffee beans (decaffeinating / steaming). The decaffeination of green coffee beans is performed by extracting the caffeine by means of dichloromethane and liquid carbon dioxide. The extract separated from the decaffeination process mainly consists of a hot aqueous solution of caffeine and coffee colours mixed with liquid coffee wax. Solid and waxy components are separated by centrifugation. During several sequential processing steps (active carbon treatment, crystallisation, filtration, washing) the caffeine solution is purified. After the final crystallisation the refined caffeine is extruded, dried, ground and packed.																		
Processing Auxiliaries	Sodium hydroxide, active carbon, Kieselguhr, potable water																		
Physical and chemical properties	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Form:</td> <td>powder</td> </tr> <tr> <td>Colour:</td> <td>white</td> </tr> <tr> <td>Odour:</td> <td>odourless</td> </tr> <tr> <td>Assay:</td> <td>> 98.5 %</td> </tr> <tr> <td>Inflammeability:</td> <td>hardly inflammable</td> </tr> <tr> <td>AIT:</td> <td>> 600°C (DIN 51794)</td> </tr> <tr> <td>Bulk density:</td> <td>approx. 350 kg/m³</td> </tr> <tr> <td>Solubility in Water:</td> <td>approx. 20 g/L (20 °C)</td> </tr> <tr> <td>pH-Value (c = 10 g/L):</td> <td>5.5 - 6.5 (20 °C)</td> </tr> </table>	Form:	powder	Colour:	white	Odour:	odourless	Assay:	> 98.5 %	Inflammeability:	hardly inflammable	AIT:	> 600°C (DIN 51794)	Bulk density:	approx. 350 kg/m ³	Solubility in Water:	approx. 20 g/L (20 °C)	pH-Value (c = 10 g/L):	5.5 - 6.5 (20 °C)
Form:	powder																		
Colour:	white																		
Odour:	odourless																		
Assay:	> 98.5 %																		
Inflammeability:	hardly inflammable																		
AIT:	> 600°C (DIN 51794)																		
Bulk density:	approx. 350 kg/m ³																		
Solubility in Water:	approx. 20 g/L (20 °C)																		
pH-Value (c = 10 g/L):	5.5 - 6.5 (20 °C)																		
Allergenic and GMO properties	The final Product does not contain substances having allergenic properties for which labelling is required (Regulation 1169/2011) and it is considered not genetically modified and not derived from a genetically modified organism as defined by EC directives 1830/2003/EC and 1829/2003/EC.																		
Intended use	Flavour, food supplement																		
Information about storage, transport, storage life and shipment	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Storage and Transport:</td> <td>Keep cool, dry and tightly closed, keep away from direct sunlight.</td> </tr> <tr> <td>Storage life:</td> <td>36 Months after production</td> </tr> <tr> <td>Shipment:</td> <td>Polypropylene Big Bags with PE-Inlet or Fibre-Drums with PE-Inlet or Square fibre-Drums with PE-Inlet</td> </tr> </table>	Storage and Transport:	Keep cool, dry and tightly closed, keep away from direct sunlight.	Storage life:	36 Months after production	Shipment:	Polypropylene Big Bags with PE-Inlet or Fibre-Drums with PE-Inlet or Square fibre-Drums with PE-Inlet												
Storage and Transport:	Keep cool, dry and tightly closed, keep away from direct sunlight.																		
Storage life:	36 Months after production																		
Shipment:	Polypropylene Big Bags with PE-Inlet or Fibre-Drums with PE-Inlet or Square fibre-Drums with PE-Inlet																		
Declaration of conformity packing material	The packing material used complies with applicable EU regulations and guidelines as well as German BfR recommendations (Recommendation XXXVI. Paper and board for food contact).																		

Form
Product Specification
Natural Caffeine Powder



Safety Instructions	Acute Toxicity Kat. 4; H302: harmful if swallowed (for further information see MSDS)
----------------------------	--

Analytical Specifications

Parameter	Standard	Unit	Limit
Identification	EP Caffeine Monograph	-	Pass Test
Appearance	CR 3 SOP L 0011	-	White, powder
Odour	CR 3 SOP L 0011	-	Odourless
Taste	CR 3 SOP L 0011	-	Characteristically bitter
Chloroform Solubility	CR 3 SOP L 0012	-	Clear Solution
Acidity	EP Caffeine Monograph	mol/kg	≤ 0.02
Colour of 1% w/v solution	*EP 2.2.2 Methode II	-	> B 8
Turbidity of 1% w/v solution	EP 2.2.1	NTU	< 3
Insolubles	CR 3 SOP L 0005	mg/kg	≤ 50 mg/kg, no obnoxious or detrimental material
Loss on Drying / Moisture	EP 2.2.32	% w/w	≤ 0.25
Melting Range	EP 2.2.14	°C	235.0 – 239.0
Related substances	EP 2.2.29	%	< 0,10
Readily Carbonizable Substances	JP General Test 49	-	Colour ≤ Matching Fluid D
Sulphated Ash	EP 2.4.14	% w/w	≤ 0.10
Heavy Metals (as Pb)	EP 2.4.8	mg/kg	≤ 10
Chloride	*DIN 38405 D 31	% w/v	≤ 0.011
Sulphate	*EPA 375.2	% w/v	≤ 0.024
Lead	FCC Appendix IIIB	mg/kg	≤ 1.0
Assay	USP Caffeine Monograph	%	98,5 – 101,5
Volatile organic impurities (Methylene Chloride)	USP Chapter 467	µg/kg	≤ 20

All analyses are executed in conformity with or, if denoted with an asterisk, analogical to the cited standard.