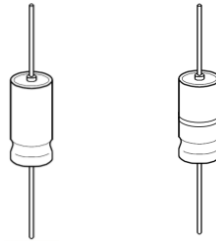


# Aluminium Electrolytic Capacitor

# Material Data Sheet

<b>Product Class</b>	<b>Axial-lead Capacitors</b>	
<b>Date</b>	<b>10/09/2019</b>	
<b>IMDS ID if available</b>	-	
<b>Version</b>	<b>08</b>	

*Remark: This material datasheet is valid for the part numbers contained in the Data Book 2017. In case of special (B4\*\*\*\*S\*\*\*\*) or obsolete capacitors please contact our sales department.*

Product Part (IMDS: semi component)	Material Class (IMDS: Material)	Material (Classification) VDA 231	Substance	TMPS** [wt%]	CAS if applicable	typical mass of material [wt-%]	Traces see 1)
<b>Active Part</b>	Light Metals	1B1	Aluminium	100	7429-90-5	35	
	Acids, Bases, Salts	6F	Ethylene glycol or Gamma-butyrolactone	65 or (90 if without NMP)	107-21-1 96-48-0	25	
	Acids, Bases, Salts	6F	1-methyl-2-pyrrolidinone (NMP) ***)	25	872-50-4		
	-	-	Others *)	10	-		
	Paper, Cardboard	5C	Cellulose	100	9004-34-6	9	
<b>Encapsulation</b>	Light Metals	1B1	Aluminium	99,5	7429-90-5	19	
	-	-	Others *)	0,5	-		
	Paper, Cardboard	5C	Cellulose	99,6	9004-34-6	1,5	
	-	-	Others *)	0,4	-		
	Duromer	2D	Phenolic resin	100	9003-35-4	2,8	
	Elastomer	2B	EPDM rubber	41,5	25038-36-2	2,4	
	Inorganic, solid	4A	Silicon dioxide	13	7631-86-9		
	Inorganic, solid	4A	Kaolinite	28,5	1318-74-7		
	Lubricant	6B	Paraffin	10,5	8012-95-1		
	-	-	Others *)	6,5	-		
	Thermoplastics	2A	PTFE	100	9002-84-0	0,1	
	Thermoplastics	2A	PET	90	25038-59-9	2	
	-	-	Others *)	10	-		
<b>Termination</b>	Iron and Steel	1A	Iron	99	7439-89-6	1	
	-	-	Others *)	1	-		
	Heavy Metals	1C12	Copper	100	7440-50-8	2	
	Heavy Metals	1C8	Tin	100	7440-31-5	0,2	
<b>Sum in total:</b>						<b>100</b>	

sizes D x L [mm]	weight [g]	sizes D x L [mm]	weight [g]	part numbers
12 x 30	5,1	18 x 39	14,7	B41689
14 x 25	5,7	20 x 29	13,5	B41690
14 x 30	6,8	21 x 30	16,5	B41691
16 x 25	7,4	21 x 35	17,0	B41692
16 x 30	8,9	21 x 39	20,0	B41693
16 x 35	10,4	21 x 49	25,0	B41696
16 x 39	11,7			B43693
18 x 25	9,3			
18 x 30	11,1			
18 x 35	12,8			

**Not applicable for the following part numbers (refer to the Not RoHS material datasheet)**

B41691A5208Q 7 B41691A8477Q 7 B41692A7687Q 9 B41693A5158Q 7 B41693A9157Q 9 B41696B7228Q 7  
 B41691A5337Q 7 B41691A8687Q 7 B41692A8108Q 7 B41693A5477Q 7 B41693A9337Q 7 B43693A1107Q 7  
 B41691A5337Q 9 B41691B5158Q 7 B41692A8227Q 7 B41693A5477Q 9 B41693A9477Q 7 B43693A1336Q 7  
 B41691A5477Q 7 B41691B7108Q 7 B41692A8227Q 9 B41693A7108Q 7 B41693B 477Q 7 B43693A1336Q 9  
 B41691A5477Q 9 B41691B8477Q 7 B41692A8337Q 7 B41693A7158Q 7 B41696A5108Q 7 B43693A1476Q 7  
 B41691A7108Q 7 B41692A5108Q 7 B41692A8337Q 9 B41693A7337Q 7 B41696A5108Q 9 B43693A1476Q 9  
 B41691A7128Q 7 B41692A5108Q 9 B41692A8477Q 7 B41693A7337Q 9 B41696A5158Q 7 B43693A2226Q 7  
 B41691A7158Q 7 B41692A5158Q 7 B41692A8477Q 9 B41693A7477Q 7 B41696A5158Q 9 B43693A2226Q 9  
 B41691A7337Q 7 B41692A5158Q 9 B41692A8687Q 7 B41693A7477Q 9 B41696A5228Q 7 B43693A2476Q 7  
 B41691A7337Q 9 B41692A5228Q 7 B41692B5228Q 7 B41693A7687Q 9 B41696A7228Q 7 B43693A2686Q 7  
 B41691A7477Q 7 B41692A5338Q 7 B41692B7158Q 7 B41693A8687Q 7 B41696A7477Q 7  
 B41691A7477Q 9 B41692A5687Q 7 B41693A 477Q 7 B41693A9107Q 7 B41696A7477Q 9  
 B41691A7687Q 7 B41692A7477Q 9 B41693A5108Q 7 B41693A9107Q 9 B41696A7687Q 7  
 B41691A8227Q 9 B41692A7687Q 7 B41693A5108Q 9 B41693A9157Q 7 B41696A7687Q 9

<b>Not Part of a Product Class</b>		<b>Important remarks:</b> 1) The declaration limit is 0.1% as defined by IEC 62474 (IEC PAS 61906). Traces are product parts, substances etc. that are below a percentage of 0.1 % by weight, if not otherwise regulated. 2) This Material Data Sheet contains typical values of the respective products set forth
<b>Contact</b>	Perosa, Eduardo	
<b>Division</b>	CAP GTI	
<b>Address</b>	Bernardo Joaquim Ferreira, 624 – Gravataí, RS, Brazil	
	Tel: +55 51 3484 7000	mailto: epqm.gc@tdk-electronics.tdk.com

\*) others: (not declarable or prohibited substances acc. GADSL)

\*\*) typical mass percentage of substance

\*\*) Following products present NMP:

B41689A8138Q 1	B41691A7337Q 19	B41692A8477Q 1
B41689A8607Q 1	B41691A7687Q 1	B41692A8687Q 1
B41689K8138Q 1	B41691A8108Q 1	B41692B7228Q 1
B41689K8477Q 1	B41691A8108Q 7	B41692B8687Q 1
B41689K8597Q 1	B41691A8128Q 7	B41692C8907Q 1
B41689K8827Q 1	B41691A8567Q 1	B41693A 108Q 1
B41693B7108Q 1	B41692A5108Q 3	B41693A 108Q 7
B41691A5208Q 1	B41692A5158Q 1	B41693A7108Q 1
B41691A5308Q 7	B41692A5478Q 7	B41693A7687Q 7
B41691A5408Q 1	B41692A5608Q 7	B41693A8108Q 7
B41691A5408Q 7	B41692A7308Q 7	B41693A8227Q 1
B41691A7128Q 1	B41692A7408Q 7	B41693A8227Q 7
B41691A7158Q 1	B41692A8158Q 7	B41693B 477Q 1
B41691A7228Q 7	B41692A8228Q 1	
B41691A7278Q 7	B41692A8228Q 7	

herein. We expressly point out that all values and statements contained herein are based on our best present knowledge and cannot be regarded as binding statements or binding product specifications, unless otherwise explicitly agreed in writing. TDK ELECTRONICS AG AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ANY REPRESENTATION OR WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, WITH REGARD TO THE STATEMENTS AND VALUES CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR SUITABILITY FOR ANY PURPOSE.

**The products set forth herein are "RoHS-compatible".** RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8<sup>th</sup>, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

**RoHS - Exemptions for the Product Class / Product according to Annex III:** (  valid  not valid )

**no exemptions;**

- Exemption 6 (a): Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight;
- Exemption 6 (b): Lead as an alloying element in aluminum containing up to 0,4 % lead by weight;
- Exemption 6 (c): Copper alloy containing up to 4 % lead by weight;
- Exemption 7 (a): Lead in high melting temperature type solder (i.e. lead-based alloys containing 85 % by weight or more lead);
- Exemption 7 (c)-I: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound;
- Exemption 7 (c)-II: Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher;
- Exemption 7 (c)-III: Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC;
- Exemption 15: Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages;
- Other Exemption than above .....