

# Varistor

# Material Data Sheet

<b>Product Class</b>	<b>Molded Varistor MT30* B72230M*</b>
<b>Date</b>	<b>05.11.2020</b>
IMDS ID if available	
<b>Version</b>	<b>5.03</b>

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)
Active Part	Ceramic	3B	ZnO Bi2O3 Sb2O3 Co3O4 NiO others*)	91 4,0 2,5 1 0,5 1	1314-13-2 1304-76-3 1309-64-4 1308-06-1 1313-99-1	35	
Termination	Composite	4D	Ag or Cu Glass frit (boro-silicate)	95 5	7440-22-4 7440-50-8	0,4	
Solder paste	Heavy Metal	1C8	Sn Ag Cu	96,5 3 0,5	7440-31-5 7440-22-4 7440-50-8	0,5	
Low tem. alloy	Heavy Metal	1C8	Sn Bi	42 58	7440-31-5 7440-69-9	0,2	
Leads	Heavy Metal	1C12	Cu	100	7440-50-8	3	
	Heavy Metal	1C8	Sn	100	7440-31-5	0,2	
Wire Spring	Heavy Metal	1C12	Cu P	99,5 0,5	7440-50-8 7723-14-0	1	
	Heavy Metal	1C8	Sn	100	7440-31-5		<0,1
Flat spring	Heavy Metal	1C12	Cu P	99,5 0,5	7440-50-8 7723-14-0	7,7	
	Heavy Metal	1C8	Sn	100	7440-31-5		<0,1
Molding	Duromer	2D	Silica Glass	70	60676-86-0	46	
			Epoxy	19	29690-82-2		
			Phenolic Resin	5	9003-35-4		
			Carbon Black	1	1333-86-4		
			others*)	5			
Cover	Thermoplastic	2A	PBT	50	26062-94-2	5	
			Epoxy resin	10	68928-70-1		
			Antimony oxide	10	1309-64-4		
			Glass fiber	30	65997-17-3		
Arc sheet	Duromer	2D	LCP	70	147310-94-9	1	
			Fiber Glass	30	65997-17-3		
<b>Sum in total:</b>						<b>100</b>	

sizes [mm]	weight range [g]	material number	part numbers
20~30	12 - 60	B72230M*	MT30*

<b>Not Part of a Product Class</b>	
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*) others: .(not declarable or prohibited substances acc. GADSL)	
**) typical mass percentage of substance	
<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 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 aluminium 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. piezoelectric 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 .....