CEDCP: The Collection of Experimental Data on Composite Properties.

Table of Contents

Electrical conductivity data

Data has been converted to S/m

	Reference	Matrix material	Filler material	Aspect ratio	File name
1	Agari (1991) [1]	Polyethylene, $2.5 \cdot 10^{-14}$ S/cm	Carbon fiber, $3.3\text{-}6.3 \cdot 10^{2}$ S/cm	1.0	Agari1991Fig4Curv1.inp
2	Agari (1991) [1]	Polyethylene, $2.5 \cdot 10^{-14}$ S/cm	Carbon fiber, $3.3\text{-}6.3 \cdot 10^{2}$ S/cm	6.0	Agari1991Fig4Curv2.inp
3	Agari (1991) [1]	Polyethylene, $2.5 \cdot 10^{-14}$ S/cm	Carbon fiber, $3.3\text{-}6.3 \cdot 10^{2}$ S/cm	21.6	Agari1991Fig4Curv3.inp
4	Agari (1991) [1]	Polyethylene, $2.5 \cdot 10^{-14}$ S/cm	Carbon fiber, $3.3\text{-}6.3 \cdot 10^{2}$ S/cm	45.3	Agari1991Fig4Curv4.inp
5	Aribou (2019) [2]	Diglycidylic Ether of Bisphenol F, $1.4 \cdot 10^{-16}$ S/cm	Carbon black Raven 2000, 6.56 S/cm	1.0	Aribou2019Fig3a.inp
6	Aribou (2019) [2]	Diglycidylic Ether of Bisphenol F, $1.4 \cdot 10^{-16}$ S/cm	Carbon black Raven 7000, 3.50 S/cm	1.0	Aribou2019Fig3b.inp
7	Landauer (1952) [3]	Bismuth, $7.7 \cdot 10^{5}$ S/m	Tin, $9.1 \cdot 10^{6}$ S/m	1.0	Landauer1952Fig5.inp
8	Wu (1997) [4]	Boron nitride, 1.0^{-14} S/m, 2.381^{-13} S/m	Graphite powder, 833.333 S/m, 34722.222 S/m	1.0	WuMcLachlan1997Fig1a.inp
9	Wu (1997) [4]	Boron nitride, 1.0^{-14} S/m, 2.381^{-13} S/m	Graphite powder, 833.333 S/m, 34722.222 S/m	1.0	WuMcLachlan1997Fig1b.inp
10	Wu (1997) [4]	Boron nitride, 1.0^{-14} S/m, 2.381^{-13} S/m	Graphite powder, 833.333 S/m, 34722.222 S/m	1.0	WuMcLachlan1997Fig3.inp
11	Sanchez	Chitosan	Hydroxyapatite	1.0	Sanchez2018Fi

	(2018) [5]		nanoparticles		g7a.inp
12	Janget (2015) [6]	Polydimethylsiloxane (PDMS), 2.5e-14 S/m	multi-walled CNT, 100 S/m?	1250	Jang2015Fig8Cond.inp
13	Wang (2012) [7]	PVDF	Fe3O4	1.0	Wang2012Fig4Cond100Hz.inp
14	Chiarello (2005) [8]	Portland cement (type I, 52.5 R),	Carbon fiber	750.0	Chiarello2005Fig6mm6.inp
15	Chiarello (2005) [8]	Portland cement (type I, 52.5 R),	Carbon fiber	375.0	Chiarello2005Fig6mm3.inp
16	Chiarello (2005) [8]	Portland cement (type I, 52.5 R),	Carbon fiber	0.5	Chiarello2005Fig6um4.inp
17	Mamunya (2002) [9]	PVC, 1e-13.5 S/m	Cu, 1e+5.8 S/m	1.0	mamunya2002Fig6Curv1.inp
18	Mamunya (2002) [9]	Epoxy resin, 1e-12.8 S/m	Cu, 1e+5.2 S/m	1.0	mamunya2002Fig6Curv2.inp
19	Mamunya (2002) [9]	PVC, 1e-13.5 S/m	Ni, 1e+4.5 S/m	1.0	mamunya2002Fig6Curv3.inp
20	Mamunya (2002) [9]	Epoxy resin, 1e-12.8 S/m	Ni, 1e+4.8 S/m	1.0	mamunya2002Fig6Curv4.inp
21	Kim (2005) [10]	Epoxy resin	Multiwalled carbon nanotubes	2000.0	Kim2005Fig5a.inp
22	Kim (2005) [10]	Epoxy resin	Multiwalled carbon nanotubes	2000.0	Kim2005Fig5b.inp
23	Barrau (2003) [11]	Epoxy resin, 7.9×10^{-16} S/cm	Carbon nanotubes	7500.0	Barrau2003Fig2a.inp
24	Barrau (2003) [11]	Epoxy resin, 7.9×10^{-16} S/cm	Carbon nanotubes	7500.0	Barrau2003Fig2b.inp
25	Clingerman (2002) [12]	Nylon 6,6 (Zytel 101 NC010), 10^{-15} S/cm	3.175-mm chopped PAN carbon fiber	13.678	Clingerman2002Fig1AN.inp
26	Clingerman (2002) [12]	Polycarbonate (Lexan HF1110-111N) 10^{-17} S/cm	3.175-mm chopped PAN carbon fiber	19.442	Clingerman2002Fig1AP.inp
27	Clingerman (2002) [12]	Nylon 6,6 (Zytel 101 NC010), 10^{-15} S/cm	200-mm milled PAN carbon fiber	9.546	Clingerman2002Fig1BN.inp
28	Clingerman (2002) [12]	Polycarbonate (Lexan HF1110-111N) 10^{-17} S/cm	200-mm milled PAN carbon fiber	10.751	Clingerman2002Fig1BP.inp
29	Clingerman (2002) [12]	Nylon 6,6 (Zytel 101 NC010), 10^{-15} S/cm	ThermocarbTM Specialty Graphite	1.0	Clingerman2002Fig1FN.inp
30	Clingerman (2002) [12]	Polycarbonate (Lexan HF1110-111N) 10^{-17} S/cm	ThermocarbTM Specialty Graphite	1.0	Clingerman2002Fig1FP.inp
31	Clingerman	Nylon 6,6 (Zytel 101	Ni-coated PAN carbon fiber	23.821	Clingerman200

	(2002) [12]	NC010), 10^{-15} S/cm			2Fig1GN.inp
32	Clingerman (2002) [12]	Polycarbonate (Lexan HF1110-111N) 10^{-17} S/cm	Ni-coated PAN carbon fiber	17.412	Clingerman2002Fig1GP.inp
33	Mamunya (1996) [13]	Polypropylene	Carbon black	1.0	mamunya1996Fig2PP.inp
34	Mamunya (1996) [13]	Polyethylene	Carbon black	1.0	mamunya1996Fig2PE.inp
35	Mamunya (1996) [13]	Polystyrene	Carbon black	1.0	mamunya1996Fig2PS.inp
36	Mamunya (1996) [13]	Poly(methyl)methacrylate	Carbon black	1.0	mamunya1996Fig2PMMA.inp
37	Mamunya (1996) [13]	Polyamide	Carbon black	1.0	mamunya1996Fig2PA.inp
38	Mamunya (1996) [13]	Polypropylene	carbon black	1.0	mamunya1996Fig3PP1.inp
39	Mamunya (1996) [13]	Polyethylene	carbon black	1.0	mamunya1996Fig3PE1.inp
40	Gojny (2006) [14]	DGEBA-based epoxy resin	Carbon black	1.0	Gojny2006Fig3CB.inp
41	Gojny (2006) [14]	DGEBA-based epoxy resin	SWCNT Elicarb	5000.0	Gojny2006Fig3SWCNT.inp
42	Gojny (2006) [14]	DGEBA-based epoxy resin	DWCNT	3571.4	Gojny2006Fig3DWCNT.inp
43	Gojny (2006) [14]	DGEBA-based epoxy resin	DWCNT-NH2 (~1%)	1428.6	Gojny2006Fig3DWCNT-NH2.inp
44	Gojny (2006) [14]	DGEBA-based epoxy resin	MWCNT	3333.3	Gojny2006Fig3MWCNT.inp
45	Gojny (2006) [14]	DGEBA-based epoxy resin	MWCNT-NH2 (~1%)	266.7	Gojny2006Fig3MWCNT-NH2.inp
46	Maiti (2013) [15]	Polycarbonate and acrylonitrile butadiene styrene	MWCNT	157.9	Maiti2013Fig2a.inp
47	Yousefi (2012) [16]	Polyurethane	Reduced graphene oxide	10000.0	Yousefi2012Fig9.inp
48	Stankovich (2006) [17]	Polystyrene	Graphene sheets	1000.0	Stankovich2006Fig3.inp
49	Zhang (2010) [18]	Polyethylene terephthalate	Graphene nanosheets	146.0	Zhang2010Fig5gn.inp

50	Zhang (2010) [18]	Polyethylene terephthalate	Graphite flake	36.0	Zhang2010Fig5gt.inp
51	Prokhorov (2023) [20]	Chitosan	Graphene oxide sheets, water 24%	150.0	Prokhorov2023Fig5aW24.inp
52	Prokhorov (2023) [20]	Chitosan	Graphene oxide sheets, water 9%	150.0	Prokhorov2023Fig5aW24.inp
53	Prokhorov (2019) [22]	Chitosan	Copper nanocomposites	1.0	Prokhorov2023Fig6a.inp
54	Sanches (2019) [23]	Chitosan	non-functionalized MWCNT	666.7	Sanches2019Fig7nf.inp
55	Sanches (2019) [23]	Chitosan	MWCNTs functionalized by chemical oxidation in HNO3	666.7	Sanches2019Fig7HNO3.inp
56	Sanches (2019) [23]	Chitosan	carboxyl-terminated MWCNTs	666.7	Sanches2019Fig7carb.inp
57	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	Multi-walled carbon nanotubes (MWCN)	2000.0	Li2008Fig5a.inp
58	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	MWCN, carboxylic functionalized	500.0	Li2008Fig5b.inp
59	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	MWCN, ester functionalized	500.0	Li2008Fig5c.inp
60	Fan (2012) [27]	Polyvinylidene fluoride (PVDF)	Graphene sheets	100. No data.	Fan2012Fig8.inp
61	Wang (2005) [33]	polyvinylidene fluoride (PVDF)	multiwall carbon nanotubes (MWNT)	500 No data.	Wang2005Fig1a.inp
62	Dang (2007b) [34]	polyvinylidene fluoride (PVDF)	Functionalized multiwalled carbon-nanotube	500.0	Dang2007bFig3a.inp
63	Sedlakova (2014) [42]	Ethylene-octene copolymer	multiwall carbon nanotubes MWCNT	200.0	Sedlakova2014MWCNT.inp
64	Sedlakova (2014) [42]	Ethylene-octene copolymer	carbon fibers (CF)	66.7	Sedlakova2014CF.inp
65	Jang (2020) [43]	IN2 Epoxy Infusion Resin	carbon nanotube (CNT)	7000.0	Jang2020Fig2a.inp

Dielectric constant data

	Reference	Matrix material	Filler material	Aspect ratio	File name
66	Sanchez (2018) [5]	Chitosan	Hydroxyapatite nanoparticles	1.0	Sanchez2018Fig7b.inp
67	Wang (2012) [7]	PVDF	Fe3O4	1.0	Wang2012Fig4Permit100Hz.inp
68	Castillo (2022) [19]	Chitosan (CS)	Titanium dioxide nanoparticles	1.0	Castillo2022Fig6.inp
69	Prokhorov (2023) [20]	Chitosan	Graphene oxide sheets, water 24%	150.0	Prokhorov2023Fig5bW24.inp
70	Prokhorov (2023) [20]	Chitosan	Graphene oxide sheets, water 9%	150.0	Prokhorov2023Fig5bW24.inp
71	Prokhorov (2020) [21]	Chitosan	Zinc oxide nanoparticles	1.0	Prokhorov2020Fig4b.inp
72	Chen (2007) [24]	β-polyvinylidene fluoride	Acetylene black	1.0	Chen2007Fig2.inp
73	Dang (2003) [25]	Polyvinylidene fluoride	$BaTiO_3$ particles	1.0	Dang2003Fig2.inp
74	Dang (2003) [25]	Polyvinylidene fluoride and $BaTiO_3$ particles at 0.2 vol. fraction	Multi-walled carbon nanotubes	700.0	Dang2003Fig3.inp
75	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	Multi-walled carbon nanotubes (MWCN)	2000.0	Li2008Fig8a.inp
76	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	MWCN, carboxylic functionalized	500.0	Li2008Fig8b.inp
77	Li (2008) [26]	Polyvinylidene fluoride (PVDF)	MWCN, ester functionalized	500.0	Li2008Fig8c.inp
78	Fan (2012) [27]	Polyvinylidene fluoride (PVDF)	Graphene sheets	100. No data	Fan2012Fig9.inp
79	Yu (2012) [28]	biodegradable poly(butylene succinate)	Natural graphite mineral	1000.0	Yu2012Fig4.inp
80	Min (2013) [29]	Bisphenol type epoxy resin	Graphite nanoplatelets	500.0?	Min2013Fig4a.inp
81	Tang (2011) [30]	Polyvinylidene fluoride (PVDF)	Zirconate titanate nanowires	13.75	Tang2011Fig4NW.inp
82	Tang (2011) [30]	Polyvinylidene fluoride (PVDF)	Zirconate titanate nanorods	3.0	Tang2011Fig4NR.inp

83	Yao (2007) [31]	ferroelectric polyvinylidene fluoride (PVDF)	Multiwall carbon nanotube (MWNT)	62.0	Yao2007Fig2a1.inp
84	Yao (2007) [31]	ferroelectric polyvinylidene fluoride (PVDF)	Multiwall carbon nanotube (MWNT)	116.0	Yao2007Fig2a2.inp
85	Yao (2007) [31]	ferroelectric polyvinylidene fluoride (PVDF)	Multiwall carbon nanotube (MWNT)	437.0	Yao2007Fig2a3.inp
86	Yao (2007) [31]	ferroelectric polyvinylidene fluoride (PVDF)	Multiwall carbon nanotube (MWNT)	833.0	Yao2007Fig2a4.inp
87	Dang (2007a) [32]	ferroelectric polyvinylidene fluoride (PVDF)	Upright carbon fiber (CF)	12.0	Dang2007aFig2.inp
88	Wang (2005) [33]	polyvinylidene fluoride (PVDF)	multiwall carbon nanotubes (MWNT)	500 No data	Wang2005Fig2a.inp
89	Dang (2007b) [34]	polyvinylidene fluoride (PVDF)	Functionalized multiwalled carbon-nanotube	500.0	Dang2007bFig3b.inp
90	Obrzut (2001) [35]	poly(ethylene glycol) diacrylate (PEGDA)	$BaTiO_3$	1.0	Obrzut2001Fig2PEGDA.inp
91	Obrzut (2001) [35]	Trimethylolpropane triacrylate (TMPTA)	$BaTiO_3$	1.0	Obrzut2001Fig2TMPTA.inp
92	Hu (2007) [36]	thermoplastic cyclic olefin copolymer (COC)	barium strontium titanate (BST), micrometer-size	1.0	Hu2007Fig2a.inp
93	Hu (2007) [36]	thermoplastic cyclic olefin copolymer (COC)	barium strontium titanate (BST), nanometer-size	1.0	Hu2007Fig2b.inp
94	Castles (2016) [37]	acrylonitrile butadiene styrene (ABS)	$BaTiO_3$	1.0	Castles2016Fig4a.inp
95	Chen (2005) [38]	epoxy resin	carbonyl-iron-particles (CIPs)	1.0	Chen2005Fig3a.inp
96	Rao (2000) [39]	comercial epoxy resin (Shipley photoepoxy (ε=3))	Lead magnesium niobate-lead titanate (PMN-PT) ceramic particles	1.0	Rao2000comp1.inp
97	Rao (2000) [39]	in-house developed epoxy (ε=4)	Lead magnesium niobate-lead titanate (PMN-PT) ceramic particles	1.0	Rao2000comp2.inp
98	Fu (20022) [40]	High Temp UV resin	$A1_2O_3$ large particles	1.0	Fu2022Fig7cALL.inp
99	Fu (20022) [40]	High Temp UV resin	$A1_2O_3$ small particles	1.0	Fu2022Fig7cALS.inp
100	Fu (20022) [40]	High Temp UV resin	$BaTiO_3$ large particles	1.0	Fu2022Fig7cBTL.inp

101	Fu (20022) [40]	High Temp UV resin	$BaTiO_3$ small particles	1.0	Fu2022Fig7cBTS.inp
102	Fu (20022) [40]	High Temp UV resin	$SrTiO_3$ large particles	1.0	Fu2022Fig7cSTL.inp
103	Fu (20022) [40]	High Temp UV resin	$SrTiO_3$ small particles	1.0	Fu2022Fig7cSTS.inp
104	Agrawal (2014) [41]	Thermoset resin epoxy LY 556	micro-sized aluminium nitride (AlN) particles	1.0	Agrawal2014Fig8a.inp
105	Agrawal (2014) [41]	Polypropylene (PP)	micro-sized aluminium nitride (AlN) particles	1.0	Agrawal2014Fig8b.inp

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