
**Reaktivne zmesi na osnovi smole, ki se uporabljajo za električno izolacijo - 2. del:
Preskusne metode**

Resin based reactive compounds used for electrical insulation - Part 2: Methods of test

Reaktionsharzmassen für die Elektroisolierung - Teil 2: Prüfverfahren

Composés réactifs à base de résines utilisés comme isolants électriques - Partie 2:
Méthodes d'essai

Ta slovenski standard je istoveten z: prEN IEC 60455-2:2022

ICS:

29.035.01	Izolacijski materiali na splošno	Insulating materials in general
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oSIST prEN IEC 60455-2:2023

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SECRETARIAT: United States of America	SECRETARY: Mr Solomon Chiang
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 112	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
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TITLE:

Resin based reactive compounds used for electrical insulation - Part 2: Methods of test

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NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**RESIN BASED REACTIVE COMPOUNDS USED FOR ELECTRICAL
INSULATION –**

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Part 2: Methods of test

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FOREWORD

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149 International Standard IEC 60455-2 has been prepared by IEC technical committee 15: Solid
150 electrical insulating materials.

151 This third edition cancels and replaces the second edition published in 1998. This edition
152 constitutes a technical revision.

153 This edition includes the following significant technical changes with respect to the previous
154 edition:

155 a) Introduction of test methods related to IEC 60455-3-8;

156 b) Additional and updated test methods for resins

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160 The text of this International Standard is based on the following documents:

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

161

162 Full information on the voting for its approval can be found in the report on voting indicated in
163 the above table.

164 The language used for the development of this International Standard, is English.

165 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
166 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
167 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
168 described in greater detail at www.iec.ch/standardsdev/publications.

169 The committee has decided that the contents of this document will remain unchanged until the
170 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
171 specific document. At this date, the document will be

- 172 • reconfirmed,
- 173 • withdrawn,
- 174 • replaced by a revised edition, or
- 175 • amended.

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INTRODUCTION

178 This part of IEC 60455 is one of a series which deals with solvent-free resin based reactive
179 compounds and their components used for electrical insulation.

180 The series consists of three parts:

181 – Part 1: Definitions and general requirements (IEC 60455-1);

182 – Part 2: Methods of test (IEC 60455-2);

183 – Part 3: Specifications for individual materials (IEC 60455-3).

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RESIN BASED REACTIVE COMPOUNDS USED FOR ELECTRICAL INSULATION –

Part 2: Methods of test

203 1 Scope

204 This part of IEC 60455 specifies methods of test to be used for testing resin based reactive
205 compounds, their components and cured compounds used for electrical insulation.

206 2 Normative references

207 The following documents are referred to in the text in such a way that some or all of their content
208 constitutes requirements of this document. For dated references, only the edition cited applies.
209 For undated references, the latest edition of the referenced document (including any
210 amendments) applies.

211 IEC 60050 (all parts), International Electrotechnical Vocabulary (available at
212 <http://www.electropedia.org>)

213 IEC 60068-2-10:2005, Environmental testing – Part 2-10: Tests – Test J and guidance: Mould
214 growth

215 IEC 60093:1980, Methods of test for volume resistivity and surface resistivity of solid electrical
216 insulating materials

217 IEC 60112:2003, Method for the determination of the proof and the comparative tracking indices
218 of solid insulating materials

219 IEC 60216 (all parts), Electrical insulating materials – Thermal endurance properties

220 IEC 60243-1:2013, Electrical strength of insulating materials – Test methods – Part 1: Tests at
221 power frequencies

222 IEC 60250:1969, Recommended methods for the determination of the permittivity and dielectric
223 dissipation factor of electrical insulating materials at power, audio and radio frequencies
224 including metre wavelengths

225 IEC 60296:2012, Fluids for electrotechnical applications – Unused mineral insulating oils for
226 transformers and switchgear

227 IEC 60426:2007, Electrical insulating materials – Determination of electrolytic corrosion caused
228 by insulating materials – Test methods

229 IEC 60455-1:1998, Resin based reactive compounds used for electrical insulation – Part 1:
230 Definitions and general requirements

231 IEC 60455-3 (all parts), Resin based reactive compounds used for electrical insulation – Part
232 3: Specifications for individual materials

233 IEC 60455-3-8:2013, Resin based reactive compounds used for electrical insulation – Part 3:
234 Specifications for individual materials – Sheet 8: Resins for cable accessories

- 235 IEC 60695-11-10:2013, Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and
236 vertical flame test methods
- 237 IEC 60814:1997, Insulating liquids – Oil-impregnated paper and pressboard – Determination of
238 water by automatic coulometric Karl Fischer titration
- 239 IEC 61033:1991, Test methods for the determination of bond strength of impregnating agents
240 to an enamelled wire substrate
- 241 IEC 61099:2010, Insulating liquids – Specifications for unused synthetic organic esters for
242 electrical purposes
- 243 ISO 37:2011, Rubber, vulcanized or thermoplastic – Determination of tensile stress-strain
244 properties
- 245 ISO 62:2008, Plastics – Determination of water absorption
- 246 ISO 75 (all parts), Plastics and ebonite – Determination of temperature of deflection under load
- 247 ISO 175:2010, Plastics – Determination of the effects of liquid chemicals, including water
- 248 239 ISO 178:2010, Plastics – Determination of flexural properties
- 249 ISO 179-1:2010, Plastics – Determination of Charpy impact properties – Part 1: None
250 instrumented impact test
- 251 ISO 179-2:1997, Plastics – Determination of Charpy impact properties – Part 2: Instrumented
252 impact test
- 253 ISO 291, Plastics – Standard atmospheres for conditioning and testing
- 254 ISO 306:2013, Plastics – Thermoplastic materials – Determination of Vicat softening
255 temperature (VST)
- 256 ISO 527 (all parts), Plastics – Determination of tensile properties
- 257 ISO 584:1982, Plastics – Unsaturated polyester resins – Determination of reactivity at 80
258 degrees C (conventional method)
- 259 ISO 604:2002, Plastics – Determination of compressive properties
- 260 ISO 868:2003, Plastics and ebonite – Determination of indentation hardness by means of a
261 durometer (Shore hardness)
- 262 ISO 1183-1:2012, Plastics – Methods for determining the density of non-cellular plastics – Part
263 1: Immersion method, liquid pycnometer method and titration method
- 264 ISO 1513:2010, Paints and varnishes – Examination and preparation of samples for testing
- 265 ISO 1523:2002, Paints, varnishes, petroleum and related products – Determination of flashpoint
266 – Closed cup equilibrium method
- 267 ISO 1675:1985, Plastics – Liquid resins – Determination of density by the pycnometer method
- 268 ISO 2039-1:1993, Plastics – Determination of hardness – Part 1: Ball indentation method

- 269 ISO 2114:1996, Plastics – Unsaturated polyester resins – Determination of partial acid value
270 and total acid value
- 271 ISO 2431:1993, Paints and varnishes – Determination of flow time by use of flow cups
- 272 ISO 2535:1997, Plastics – Unsaturated polyester resins – Measurement of gel time at 25
273 degrees C
- 274 ISO 2554:1997, Plastics – Unsaturated polyester resins – Determination of hydroxyl value
- 275 ISO 2555:1989, Plastics – Resins in the liquid state or as emulsions or dispersions –
276 Determination of apparent viscosity by the Brookfield test method
- 277 ISO 2592:1973, Petroleum products – Determination of flash and fire points – Cleveland open
278 cup method
- 279 ISO 3001:1997, Plastics – Epoxide compounds – Determination of epoxide equivalent
- 280 ISO 3219:1993, Plastics – Polymers/resins in the liquid state or as emulsions or dispersions –
281 Determination of viscosity using a rotational viscometer with defined shear rate
- 282 ISO 3451-1:1997, Plastics – Determination of ash – Part 1: General methods
- 283 ISO 3521:1997, Plastics – Unsaturated polyester and epoxy resins – Determination of overall
284 volume shrinkage
- 285 ISO 3679:1983, Paints, varnishes, petroleum and related products – Determination of flashpoint
286 – Rapid equilibrium method
- 287 ISO 4573:1978, Plastics – Epoxide resins and glycidyl esters – Determination of inorganic
288 chlorine
- 289 ISO 4583:1998, Plastics – Epoxide resins and related materials – Determination of easily
290 saponifiable chlorine
- 291 ISO 4615:1979, Plastics – Unsaturated polyesters and epoxide resins – Determination of total
292 chlorine content
- 293 ISO 4625:1980, Binders for paints and varnishes – Determination of softening point – Ring-and-
294 ball method
- 295 ISO 4895, Plastics – Liquid epoxy resins – Determination of tendency to crystallize
- 296 ISO 7056, Plastics laboratory ware – Beakers
- 297 ISO 9396:1997, Plastics – Phenolic resins – Determination of the gel time at a given
298 temperature using automatic apparatus
- 299 ISO 11357-2:1999; Plastics – Differential scanning calorimetry (DSC) – Part 2: Determination
300 of glass transition temperature
- 301 ISO 11359-2:1999, Plastics – Thermomechanical analysis (TMA) – Part 2: Determination of
302 coefficient of linear thermal expansion and glass transition temperature
- 303 ISO 11359-3:2002, Plastics – Thermomechanical analysis (TMA) – Part 3: Determination of
304 penetration temperature