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Thermoplastics piping systems for non-pressure applications — Unplasticized poly(vinyl chloride) (PVC-U) pipes and fittings — Determination of the viscosity number and K-value

Systèmes de canalisations thermoplastiques pour applications sans pression — Tubes et raccords en poly(chlorure de vinyle) non plastifié (PVC-U) — Détermination de l'indice de viscosité réduite et de la valeur K

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13229 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 1, *Plastics pipes and fittings for soil, waste and drainage (including land drainage)*.

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Thermoplastics piping systems for non-pressure applications — Unplasticized poly(vinyl chloride) (PVC-U) pipes and fittings — Determination of the viscosity number and K-value

1 Scope

This International Standard specifies a method for the determination of the viscosity number (also known as reduced viscosity) and K-value of an unplasticized poly(vinyl chloride) (PVC) resin derived from a pipe, fitting or compound.

In this International Standard, only the method for isolation (or separation) of the PVC resin is detailed, while the determination of the viscosity number is given in ISO 1628-2.

The presence of other additives or polymers can invalidate this method (see Clause 3).

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2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 1628-2, *Plastics — Determination of the viscosity of polymers in dilute solution using capillary viscometers — Part 2: Poly(vinyl chloride) resins*

3 Principle

A PVC resin, contained in a sample taken from a pipe, a fitting or a compound, is separated from most additives by dissolution in tetrahydrofuran (THF) and precipitation by methanol from a portion of the solution that has been isolated by centrifuging and decantation. The presence of additives in injection-moulding compounds can affect the results for materials for/from injection-moulded fittings.

If other polymers soluble in THF and insoluble in methanol (e.g. PMMA material) are present, this method shall not be used.

The precipitate is used for estimation of the viscosity number and K-value in accordance with ISO 1628-2.

4 Reagents for isolation or separation of the PVC resin

4.1 Tetrahydrofuran (THF), stabilized.

WARNING — It is very important for safety reasons that personal protective clothing be used when applying solvents to the test specimen. The use of solvents in regard to application of this International Standard may be further controlled under national and/or regional legislation. In particular, the THF used shall be collected, stored and sent to solvent recovery.

4.2 Methanol.

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