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Chemical conversion coatings — Rinsed and non-rinsed chromate conversion coatings on aluminium and aluminium alloys

*Couches de conversion chimique — Couches de conversion au chromate
rincées et non rincées sur aluminium et alliages d'aluminium*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

International Standard ISO 10546 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Sub-Committee SC 8, *Chemical conversion coatings*.

Annexes A and B of this International Standard are for information only.

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International Organization for Standardization

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Chemical conversion coatings — Rinsed and non-rinsed chromate conversion coatings on aluminium and aluminium alloys

1 Scope

This International Standard specifies requirements relating to rinsed and non-rinsed chromate conversion coatings on aluminium and aluminium alloys intended to give protection against corrosion and as a base for other coatings.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2409:1992, *Paints and varnishes — Cross-cut test*.

ISO 3892:1980, *Conversion coatings on metallic materials — Determination of coating mass per unit area — Gravimetric methods*.

ISO 4519:1980, *Electrodeposited metallic coatings and related finishes — Sampling procedures for inspection by attributes*.

ISO 9227:1990, *Corrosion tests in artificial atmospheres — Salt spray tests*.

IEC 68-2-3:1969, *Environmental testing — Part 2: Tests — Test Ca: Damp heat, steady state*.

IEC 130-1:1988, *Connectors for frequencies below 3 MHz — Part 1: General requirements and measuring methods*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 rinsed chromate coating: Chromate coating that is rinsed in water prior to drying. This type of coating is typically applied to extruded aluminium fabricated parts, castings and long coils.

3.2 non-rinsed chromate coating: Chromate coating that is dried immediately after the chromating step without receiving a water rinse. This special type of coating is normally used on long coils of aluminium sheet stock that receive an immediate subsequent paint or adhesive coating, sometimes referred to as coil coating.

4 Surface preparation

The surfaces of the parts to be chromated shall be clean and substantially free of any oxidation, scale or soils such as metal turnings, grinding dust, oil, grease, lubricants, hand-sweat or any other contamination that may be detrimental to the final finish. The parts must therefore be cleaned before chromating and if necessary be pickled. Figure B.1 shows the various processing step options. Prior to the non-rinsed chromating process, surfaces must be free of non-reactive soluble salts.

5 Method of application of chromate coatings

Metallic materials other than aluminium should not be treated in the same chromating solution, in order to avoid galvanic corrosion.

Chromate conversion coatings are normally applied by dipping. They may also be applied by inundation, spraying, roller coating or by wipe-on techniques. The application method used should comply with the op-