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Autore	Smithells Colin J (Colin James)
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Nota di contenuto	Cover; Smithells Metals Reference Book; Contents; Preface; Acknowledgements; Disclaimer; Contributors; 1 Related designations; References; 2 Introductory tables and mathematical information; 2.1 Conversion factors; 2.1.1 SI units; Printed form of units and numbers; Heading of columns in tables and labelling of groups; Temperatures; 2.1.2 Temperature scale conversions; 2.2 Mathematical formulae and statistical principles; 2.2.1 Algebra; Identities; Ratio and proportion; Logarithms; The quadratic equation; The cubic equation; 2.2.2 Series and progressions; Numerical series Arithmetic Progression Geometric progression; Taylor's series; Maclaurin's series; Binomial series; Logarithmic series; Exponential series; Trigonometric series; Series for hyperbolic functions; 2.2.3 Trigonometry; Definitions and simple relationships; Radian measure; Compound angles; Properties of triangles; Hyperbolic functions; 2.2.4 Mensuration; Plane figures; Solid figures; 2.2.5 Co-ordinate geometry (two dimensions, rectangular axes); Straight line; Triangle; Circle; Ellipse; Parabola; Hyperbola; 2.2.6 Calculus; Differentials; Integrals; Elementary forms; Differential equations Equations of the first order2.2.7 Introduction to statistics; 2.2.7.1

Introduction and cross-references; 2.2.7.2 Descriptive statistics; Measures of centre; Measures of variability; Histogram; The boxplot; Laws of probabilities; Permutations; Combinations; Random variables and their frequency functions; The binomial PMF; The poisson distribution; Continuous frequency functions; The uniform pdf; The Normal (or Gaussian) distribution N(, [sup(2)]); The percentiles of a Normal distribution; The reproductive property of the Normal distribution; The Central Limit Theorem (CLT)
The Normal approximation to the binomial The exponential pdf; 2.2.7.3 Statistical inference; Properties of point estimators; Sampling distributions of statistics with underlying normal parent populations; Confidence intervals for one parameter of a normal Universe; Confidence intervals for parameters of two normal Universes; 2.2.7.4 Statistical Process Control (SPC); Shewhart control charts for variables; S- and x-charts; Shewhart control chart for fraction nonconforming (The P-chart); Shewhart control chart for number of nonconformities per unit (The u-chart)
3 General physical and chemical constants3.1 Radioactive isotopes and radiation sources; References; 4 X-ray analysis of metallic materials; 4.1 Introduction and cross references; 4.2 Excitation of X-rays; 4.2.1 X-ray wavelengths; 4.3 X-ray techniques; 4.3.1 X-ray diffraction; 4.3.1.1 Experimental methods; 4.3.1.2 Accessory attachments for diffractometers; 4.3.2 Specific applications; 4.3.2.1 Phase identification and quantitative measurements; 4.3.2.2 Determination of retained austenite in steel; 4.3.2.3 X-ray residual stress measurements; Measurement of microstresses
4.3.2.4 Preferred orientation

Sommario/riassunto

Smithells is the only single volume work which provides data on all key aspects of metallic materials.Smithells has been in continuous publication for over 50 years. This 8th Edition represents a major revision.Four new chapters have been added for this edition. these focus on; * Non conventional and emerging materials - metallic foams, amorphous metals (including bulk metallic glasses), structural intermetallic compounds and micr/nano-scale materials. * Techniques for the modelling and simulation of metallic materials. * Supporting technologies for the processing