

Book Reviews

Nitrocelluloses, the materials and their applications in propellants, explosives and other industries, by Jean Quinchon and Jean Tranchant, Ellis Horwood, Chichester, ISBN 0-745-80569-8, 164 pp., £39.95.

This book is a translation from the French of volume 2 of "Les poudres, propergols et explosifs" first published in 1984. It is concerned in the main with the properties and manufacturing processes involved in the production of the family of nitrocelluloses but is also accords a similar treatment to some nitrates of the sugar family as well as to other materials used in the formulation of propellants and explosives.

It notes that the principal uses for nitrocelluloses are in such civilian applications as the provision of surface coatings, and in military applications chiefly as propellants in guns and in rockets.

The manufacture of cellulose nitrates is described and related to the basic chemical properties of cellulose and its derivatives. Attention is called to the fact that, unlike other substances used in the manufacture of explosives, cellulose is not a pure chemical substance but one whose properties vary with its natural origin.

Consideration of safety and hygiene are discussed with particular attention being directed to the necessity of handling nitrocellulose in a wet condition; wetting can be with alcohol or with water. The more highly nitrated the cellulose the greater the necessity. Brief case histories are provided to illustrate this point that dry nitrocellulose is very dangerous.

Fires in general demand direct jets; neither foam nor fine spray are effective. Fires result in the evolution of toxic nitrous fumes.

For the transport of nitrocelluloses the authors strongly recommend cardboard containers rather than metal drums as these are less susceptible to shock and, through their much lower thermal conductivity, protect the contents in the event of fire.

The book is copiously referenced and brings a considerable body of French language literature on the subject to the attention of English speaking readers.

VICTOR C. MARSHALL