



68 CANNOCK STREET, LEICESTER, LE4 9HR
TEL: 0116 276 7162 FAX 0116 276 7446
E-mail : info@lenton-treatments.co.uk
Website: www.lenton-treatments.co.uk

Lenton Treatments (Leicester) Ltd

Chemical Desanding and Descaling

LT2/2003 OPERATION OF THE SODIUM HYDRIDE PROCESS FOR ALL ROLLS-ROYCE RPS 379 WORK

Sodium hydride is a powerful reducing agent. It is used for de-scaling at a concentration of up to two per cent in a bath of molten caustic soda, where it reacts with oxide present on metal in the form of scale and reduces them to a finely divided metal powder, or sometimes to a loosely adhering flaky foil. It also reacts with the Silica in foundry sands.

Chromium oxide is the only common exception to this rule, being reduced to a lower oxide. This also adheres loosely, however, and can easily be removed.

Sodium hydride is generated in the plant by a reaction between hydrogen in the form of cracked ammonia, and sodium.

The articles which are to be treated are immersed in the bath of caustic soda containing sodium hydride, at a temperature of 380°C +/- 20°C.

When the articles are placed in the basket or on hooks they should be positioned in such a way that air locks will not occur, and drag out of caustic soda on removal will be minimised by effective drainage.

After treatment the articles are allowed to drain for a minute or two, and then quenched in cold water. The steam generated by this operation usually removes most of the reduced scale remaining on the surface of the metal. Any still adhering can be washed off by means of a high pressure water jet or similar means. A final swill in hot-water cleans away the last traces of caustic soda, and aids rapid drying.

Directors: R M Plant & P L Sumpter

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