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## **Lenton Treatments (Leicester) Ltd**

### **Chemical Desanding and Descaling**

#### **LT2/2014 OPERATION OF THE SODIUM HYDRIDE PROCESS**

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 either a finely divided metal powder or sometimes to a loosely adhering flaky foil. It also reacts with the Silica in foundry sands and some ceramic cores.

The only common exception to this rule is Chromium oxide which is 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.

For treatment the articles are positioned in such a way that air locks will not occur, and drag out of chemical on removal from the bath will be minimised by effective drainage.

The articles to be treated are immersed in the bath which contains Sodium Hydride, at a temperature of 380°C +/- 20°C.

Typical treatment times are about an hour for sand and light scale with heavy scale and ceramic usually requiring an overnight treatment.

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