

To whom it may concern

Declaration of Compliance; 1935/2004/EC, 2023/2006/EC and 1907/2006/EC (Reach) as well as GB 4806.1-2016.

a.h. nichro Haardchrom A/S hereby confirms that all hard chrome coatings produced at our production facilities, Søvangsvej 11 - 15, 2650 Hvidovre, DK and delivered to our customers or clients do comply with current legislation for materials and articles intended to get into contact with food.

The declaration is based on:

The principle underlying this Regulation (1935/2004/EC) is that any material or article intended to come into contact directly or indirectly with food must be sufficiently inert to preclude substances from being transferred to food in quantities large enough to endanger human health or to bring about an unacceptable change in the composition of the food or a deterioration in its organoleptic properties; (REGULATION (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004). This quote also captures the essence of the Chinese National Food Safety Standard; GB 4806.1-2016.

In relation to this Regulation, which includes Good Manufacturing Practice for materials and articles intended to get into contact with food, the main issue for a.h. nichro Haardchrom A/S is to ensure that our clients is provided with full traceability in accordance with their requests; (Commission REGULATION (EC) No. 2023/2006 of 22 December 2006 on good manufacturing practice for materials and articles intended to get into contact with food).

A high level of human health and environmental protection should be ensured in the approximation of legislation on substances, with the goal of achieving sustainable development; (REGULATION (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006).

The attempt of a.h. nichro Haardchrome A/S ensuring that these Regulations are fulfilled:

All Nichro's activities are governed by Danish legislation.

The external environment is regulated by Nichro's environmental permit issued on March 23, 1999. The Municipality of Hvidovre conducts regularly monitoring ensuring compliance with the terms of the permit.

The working environment has been approved by the Danish Working Environment Authority in a letter dated 5. April 2005. The authority conducts regular inspection visits. In addition Nichro has entered into an agreement with Avidenz A/S and one of their consultants visit us twice a year and acts as an external supervisor.

Nichro holds an authorization from the Danish Veterinary and Food Administration dated December 21, 2015 for manufacture of semi-manufactured food contact materials (branch no. 20.00.00.A). Said authority conducts regular inspection visits once a year.

Beside this Nichro has established and implemented an integrated management system in accordance with the guidelines in ISO 9001 and ISO 14001. The system was established in 2003 and has been developed gradually over the years. The system is not certified.

Brief about hard chrome coatings and its relations to Food

Nichro produces hard chromium coatings in a conventional chromium bath based on sulfuric acid and chromic acid (Cr^{6+}). The resulting surface coating consists of hard metallic chrome (Cr^0) with micro cracks in the range of 300 - 800 cracks per cm.

The oxygen of the air oxidizes the outer chrome layer and a thin and dense oxide film of Cr_2O_3 is formed on the surface itself. The film acts as an effective barrier to further oxidation. The metal has become passive. The passive film causes chromium to be resistant against corrosion in even aggressive environments.

The oxide film is dissolved in halogen-containing environments; i.e. environments with F^- , Cl^- , Br^- , I^- ions or in environments where pH and electrode potentials are unfavorable.

The Technical University of Denmark (DTU) performed in 2007 an analysis of Metals in Food for the Danish Environmental Protection Agency. The results were published in 2008 in the report *Metal Release by Corrosion and Wear in the Food Industry*; (the Danish title is *Metal in Food – et forskningsprojekt om forurening af fødevarer med metaller under production.*)

This project documents that migration of metals to food (chromium amongst other) do not cause health problems; all measurements of metal concentrations are very low close to the detection limits. On the other hand the project did detect metal particles origination from the metal surface. Such particles might be the result of tribo-corrosion initiated by incorrect CIP-cleaning procedures. However such metal particles do not cause health problems, but they do change the composition of the food.

As a consequence our compliance declaration only covers all hard chrome coatings when leaving our production facilities in Hvidovre, Copenhagen, Denmark.

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Brief about the production of hard chrome coatings

Nichro is producing its hard chrome coatings in accordance with *DS/EN ISO 6158 – Metallic coatings; Electrodeposited coatings of chromium for engineering purposes*. The traceability of the individual items is in accordance with custom requirements. The internal production control is performed as part of Nichro's ISO-system and includes measurement of the various items before plating and after plating. These measurements are supplied with lab-analysis of the plating electrolyte and related to the said items via bath number and production data.

It should be emphasized that all hard chrome electrolytes do contain hexavalent chromium, Cr^{6+} . Research institutes worldwide are trying to develop new hard chromium electrolytes based on trivalent chromium, Cr^{3+} ; so far unsuccessfully meaning that commercial available alternatives do not exist at present.

Furthermore it should be stressed that no hexavalent chromium is present in any hard chrome coating, because the Cr^{6+} disappears as it is plated as metallic chromium, Cr^0 .

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