



Copeland Corporation
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**STAKEHOLDER CONSULTATION ON
ADAPTATION TO SCIENTIFIC AND TECHNICAL PROGRESS
UNDER DIRECTIVE 2002/95/EC ON THE
RESTRICTION OF THE USE OF CERTAIN HAZARDOUS
SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT
FOR THE PURPOSE OF A POSSIBLE AMENDMENT OF THE ANNEX**

Emerson Electric brings technology and engineering together to provide innovative solutions in industrial automation; process control; heating, ventilating and air conditioning; electronic and telecommunications; and appliance and tools. Copeland Corporation, Emerson's subsidiary with divisions in the US, European and Asia, is the largest manufacturer of commercial and residential air conditioning and refrigeration compressors. We have a global manufacturing capacity of over 8 million compressors yearly on three continents.

Copeland agrees with the proposed exemption 13 "Lead in lead-bronze bearing shells and bushes" and would like to give the following answers to the questions of the consultation

- **Do feasible substitutes currently exist in an industrial and/or commercial scale?**
No feasible substitutes have been found that approach the reliability of our current bearing materials. Copeland has two versions of lead-bronze bearings; one with bronze with lead particles and a steel sleeve backing and a second one made of a composite of bronze, PTFE with lead particles and a steel sleeve backing. We are continually looking for additional candidate materials, but there are no such materials today. Based on our current knowledge and availability of materials we therefore are in the need of an exemption to the ban of lead in bearings.
- **Do any restrictions apply to such substitutes?**
As stated above there are no such substitutes and therefore no restrictions.
- **What are the costs and benefits and advantages and disadvantages of such substitutes?**
The consequence of lower bearing reliability would mean disruption and increase cost to the user. Critical applications such as medical devices, food preservation and mainframe computer cooling would be adversely affected by bearing failures. Also, servicing or repairing more compressors in-the-field translates into an increased likelihood of accidental refrigerant leakage into the atmosphere. This would therefore have an adverse impact on the environment.

As a final note, Copeland is committed to continuously improving the value of its products in terms of environmental aspects, cost, performance, durability and reliability. We will continue the search for better alternatives to lead containing bearings, regardless of the exemption.

In the enclosed annex more information is provided on the technical details regarding our bearing products.

Please do not hesitate to contact us, should you need any further technical and scientific evidence.

Yours sincerely,

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