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The Search for Cleaner Home Appliances: The Case of BSH Company

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Abstract

The United Nations (UN) established in 1987 at Montreal a global action program called the Montreal Protocol, focusing on substances which deplete the ozone layer. Ten years after the Montreal Protocol, the UN signed the Kyoto Protocol, which aims at reducing the emission of gases that contribute to the greenhouse effect. In alignment to these Protocols and confirming its environmental responsibility, since 1997 the BSH Continental Home Appliances group (located at Hortolândia city, Brazil), has incorporated the Hydrocarbon (HC) Cyclopentane as an isolating and expander agent. Following this continuous improvement philosophy and in tune with the Federal Government and the Ministry of the Environment, BSH Continental once again innovated and implemented, for the first time in the country, another HC in its production, the R600a refrigeration gas also known as Isobutane. The R600a is composed by carbon and hydrogen and it is considered as a natural fluid similar to LP (Liquefied Petroleum), largely used in Europe, especially in Germany. The hydrocarbons – natural gases produced from petroleum totally harmless to the ozone layer and with a global warming potential value similar to the CO₂. The hydrocarbons are refrigeration fluids intrinsically more efficient than the HFCs. It means that, with technological advances, the possibility for future reductions in the energy consumption of the refrigerators is more likely to happen than with the use of HFCs. For a country such as Brazil, with a significant potential for the increase of the number of household appliances per resident, the choice for more economic technological lines in the energy consumption, protection of the ozone layer and with the preservation of the global environment is the challenge and the objective for the refrigeration industries that aim at manufacturing innovative products with cleaner technology and that contribute for a global sustainability. Aware of the harmful effects to the Environment caused by the gases used in industrial processes, BSH Continental has anticipating the implementation of more restrictive requirements for the use of these gases, included the isobutane gas (also known as R600a) in its production line or also call of R600a, which combined with the cyclopentane used as an insulator and expander, will form what we can call Ecological refrigerators.

Keywords: global warming, ozone layer, Isobutane, hydrocarbons
