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The Impact of a Possible PFAS Restriction on STIHL:

A Summary of the STIHL contribution to the Public Consultation

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The STIHL Group develops, manufactures and distributes power tools for professional forestry and agriculture as well as for garden and landscape maintenance, the construction sector and the discerning private user. STIHL has been the world's largest-selling chain saw brand since 1971. A strong commitment to innovation has enabled the STIHL Group, employing more than 20,000 people, to grow sustainably and exceed the EUR 5 billion revenue mark.

The restriction proposal put forward by five countries' Competent Authorities includes around 10,000 substances of the per- and polyfluoroalkyl substances (PFAS) group under Annex XV of REACH. While the STIHL Group supports the goal of restricting substances that have been proven to be harmful to humans and the environment, it strongly points out that not all of the PFAS covered by the restriction dossier do pose a hazard. Within this group of 10,000 substances, there are safe fluoropolymers. They are not classified at all as hazardous within the CLP. Furthermore, they meet the OECD polymer of low concern criteria. This means they are nontoxic, biocompatible, non-soluble and immobile molecules, and they are by and large considered to have an insignificant environmental and human health impact.

Fluoropolymers, including the group of fluoroelastomers, are currently relevant for STIHL garden- or power tools in components like batteries, electrical motors and combustion engines (including safety relevant key components like fuel hoses, carburetors and manifolds). All suitable Lithium ion battery cells that are currently available on the market contain fluoroelastomers, especially PVDF and PTFE. So far, STIHL has identified more than 1000 articles and components containing fluoropolymers. It is extremely challenging to get supplier information on the presence of PFAS in articles due to complex supply chains and the fact that there is so far no legal obligation for communicating along the supply chain. We expect that it will take up to 24 months to get a comprehensive picture.

STIHL applications often need to fulfil demanding technical requirements due to the challenging environments in which those types of machineries operate. STIHL designs its products to operate for decades under extremely harsh, demanding, and arduous work environments. In particular, fluoropolymers offer the following properties:

- Resistance to cycles of high and low temperatures (-30 °C to > 200 °C), in presence of high vibration environments (for comparison: a chainsaw at full speed runs up to 14500 1/min, a passenger car up to 6000 1/min, a formula-1 car up to 12000 1/min), for a prolonged period of time while ensuring the reliability of the device
- Chemical Resistance to contact with fuels and lubricants without swelling above the allowed extent
- Resistance to ozone-induced cracking

Currently, there are no alternative materials available on the market that are comparable to fluoroelastomers in terms of temperature-, vibrational- and chemical behavior.

The PFAS restriction proposal does not consider any derogation for power tools, gardening tools or NRMM (non-road mobile machinery) in general. An 18-month transition period for full conversion of products and processes, as foreseen in the proposal, is insufficient – even if alternative materials were available. A ban on all PFAS (including fluoroelastomers) without appropriate transition periods, as envisaged in the restriction proposal, would abandon most STIHL products from the European market; entire production facilities in the EU would be put at risk!

Therefore, STIHL asks for the following exceptions and derogations:

- We request the removal of fluoropolymers (including fluoroelastomers) from the scope of the restriction. Concerning the manufacturing phase, the risks of PFAS emissions to the environment can be and are controlled with alternative Risk Management Options. Concerning the use phase, they are considered non-toxic, non-bioaccumulative, non-mobile and as such, are classed as polymers of low concern. Concerning the end-of-life phase, incineration of fluoropolymers does not contribute to environmental PFAS emissions and is a safe method of disposal.
- STIHL suggests changes to the proposed wording for Derogation 6 (o). Changes to the original wording are highlighted in bold:
“Applications affecting the proper functioning related to the safety **and reliability of conventional powertrain systems (including internal combustion engine, transmission unit, fuel storage and fuel supply system), alternative powertrain systems (including e.g. electric motor, transmission unit, energy supply system such as a battery or fuel cell / pressure tank and associated peripherals) and any combination between both systems**, affecting the safety **of humans or reliability of equipment** until 13.5 years after entry into force”.
- The maintenance and reparability of STIHL products no longer in production at the entry in force of the restriction must be reassured. Therefore, we request a derogation on spare parts.
- The battery industry (see e.g. REACHARGE contribution: reference number cb6a7d0a-caa1-42fa-a806-f7410538f8b9) asks for derogations of up to 13.5 years for the transition towards PFAS-free battery cells. In order to design, test, certify and manufacture battery

packages using PFAS free battery cells, STIHL asks for an additional transition time of 2-3 years after suitable PFAS free alternatives in battery cells are available on the market.

- A clearly defined procedure for the reapplication, review and extension of exemptions is necessary. For derogations with 13.5 years of transition time, we suggest a review after 8 years.

In summary, fluoropolymers should be exempted from the restriction, derogations for NRMM equipment must be considered, the principle of "repair as produced" should apply to spare parts and significantly longer transition periods than 18 months are required for conversions to PFAS-free materials.