

# 2004

SIGRAFLEX®  
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1972  
2022

## SIGRAFLEX® APX2® foil: Best-in-class temperature and oxidation resistance

From the beginnings, SIGRAFLEX flexible graphite foil was used successfully as a sealing material in automotive applications. The first mass product were cylinder head gaskets due to the foil's ability to easily adapt to uneven surfaces and its suitability for highly automated gasket manufacturing.

SGL Carbon's Research & Development department at its US site in Valencia/CA had continuously worked on even improving the foil's oxidation resistance. The engineers Mike Roemmler and Tim Burnett together with their colleagues intensified those activities in the 1990s. Automotive OEMs had strongly requested more resistant graphite sealing materials to also meet the rigorous demands of modern exhaust systems. Various oxidation inhibitors, formulations, concentrations etc. were tested to find the optimum solution.

The result of the group's work was finally launched in 2004: The unrivalled best-in-class oxidation and temperature resistant graphite foil SIGRAFLEX APX2®. Its typical weight loss of only 0.6% per hour in air at 670°C (1,238 °F) is still unmatched. It allows for producing e. g. exhaust gasket rings, exhaust manifold gaskets, exhaust gas recirculation (EGR) gaskets or diesel particulate control (DPC) / filter (DPF) gaskets of the highest quality. The first customer who sold SIGRAFLEX APX2 gaskets to the market was the Japanese company Oiles Corporation.

SIGRAFLEX APX2's performance advantages are not only valued by the automotive industry but are also essential for



SIGRAFLEX APX2 foil, packing rings made from it and gaskets with APX2 foil layer or filling

high-temperature industrial sealing where durability, reliability, and safety are of critical importance – no matter if used for producing packing rings, spiral wound, Kammprofile, or flat gaskets.

SGL Carbon's proprietary production process allows to incorporate an oxidation inhibitor directly into the structure of the graphite foil, which best optimizes SIGRAFLEX APX2's oxidation resistance behavior.

Since SIGRAFLEX APX2 is such a unique product, it offered even more options for product innovations. The APX2 family would grow over the years.