

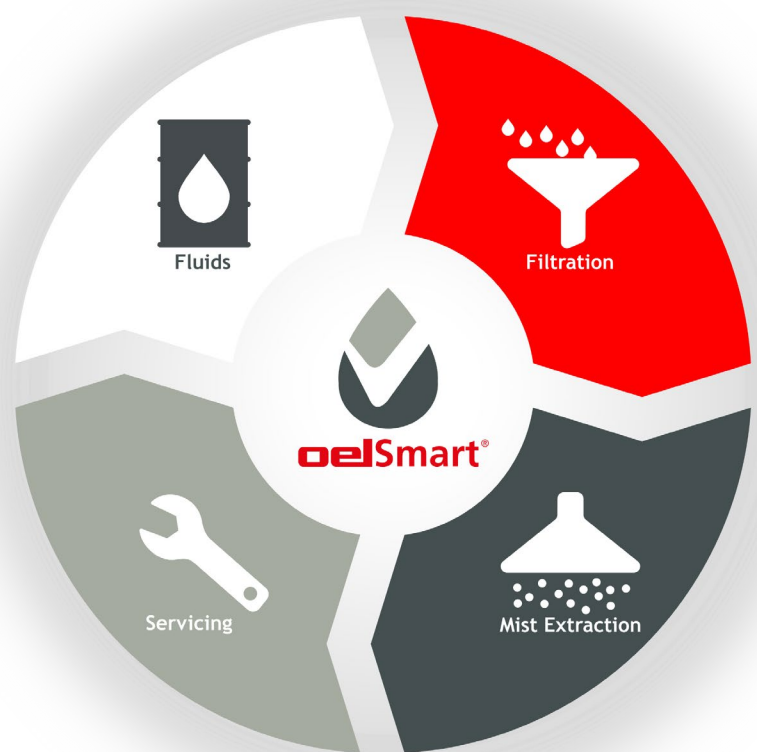


**oelSmart**

Solutions for:  
**CARBIDE**

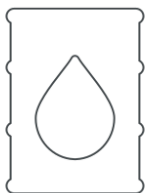


## oelSmart<sup>®</sup> Systems for Carbide



When designing systems that will process carbide, the presence of cobalt within the material is a key consideration. During the machining process, it is possible for cobalt to 'leach' out and dissolve into the metalworking fluid. Classed as a heavy metal, the substance in this form is toxic and can pose a serious risk to health if swallowed, absorbed through the skin, or inhaled.

Taking an holistic and proactive oelSmart<sup>®</sup> approach can help grinders ensure that applications involving carbide are optimised for performance, productivity and H&S protections. Each aspect of the fluid system has a role to place, read on to find out how...



## oelSmart<sup>®</sup> Fluids for Carbide



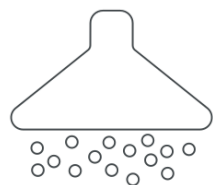
When choosing your coolant, opt for an oil which contains cobalt leaching inhibitors. A high-quality carbide-equipped oil can last for years if well-filtered and prevent even a single ppm of cobalt entering the fluid. However, equally important is to prevent any tramp oil or foreign fluids entering the grinding oil as some additives found within industrial lubricants such as hydraulic and slideway oil can in fact boost the cobalt leaching process. Regular oil tests are recommended to help identify potential contamination at an early stage, as well as providing a more general insight into a fluid's ongoing performance levels.



## oelSmart<sup>®</sup> Filtration for Carbide



A sintered material, carbide uses powdered cobalt to bind irregular shaped tungsten carbide particles together. The resulting debris created by the grinding process tends to be much smaller in size than, say, HSS. To effectively remove carbide swarf the filtration provision must be capable of filtering debris particles down to 3-5microns. Insufficient filtration can exacerbate any cobalt leaching that occurs by allowing particles to remain within the machine and filter tank, providing more opportunity for a reaction with the oil.



## oelSmart<sup>®</sup> Mist Extraction for Carbide



Just as leached cobalt can be found within metalworking fluids, so it can be present within oil mist particles. If inhaled by workers it can cause inflammation and fibrosis of the lung in a condition called 'hard metal disease', making an effective and properly maintained mist extraction unit crucial to reducing potential worker exposure. Any extractor technology can be considered (i.e., electrostatic, centrifugal, or mechanical) but it is essential to correctly match the airflow to the process and ensure mist extraction filters are well maintained and cleaned or replaced when necessary.



## oelSmart<sup>®</sup> Maintenance for Carbide



Equally important as an effective system setup, is an appropriate servicing and maintenance schedule for the equipment involved. A proactive approach, carried out in accordance with manufacturer recommendations, is essential for ensuring consistent performance and HSE compliance, especially COSHH requirements concerning workplace exposure levels to cobalt, and regulations concerning LEV system testing, which should be conducted by a competent person every 14 months, at least. Regular testing of fluids is recommended to monitor any changes in cobalt levels within the coolant.



For queries, advice and assistance regarding carbide-processing applications please contact our team of technical oelHeros on 01745 814 777

**Stay #oelSmart!**

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