



Cool new technology

A compatible, two-part coolant/cleaner that is used for a wide variety of MW operations, and also has the versatility to function as a process cleaner

The growing demand for sustainable production models has been a challenge across industries. One such concept is Resource Efficient Manufacturing (REM) — doing more with less and finding viable reuse and recycling technologies to conserve materials. Quaker Chemical as one of the pioneers of Metalworking Fluid producers has brought in sustainable chemistry and thus helping customers on significantly improving their energy efficiency, waste reduction, safety, and durability through new approaches to coolant and cleaner use.

Since 2005, Quaker has offered its 2PAQ product to customers in Europe. Our two-component fluid replaces many (sometimes 20 or more) dedicated fluids that a manufacturer might use for machining operations. So, this “green” technology helps customers to be both ecologically and economically efficient.

The way it works: 2PAQ is a compatible, two-part coolant/cleaner that is used for a wide variety of MW operations, and also has the versatility to be used as a process cleaner.

More specifically, it uses an alkaline and oil phase — typically mixed into water to prepare emulsions. When added to water, the “alkaline phase” can be used for the machining of cast iron, steel and aluminum alloys. The “oil phase” can be used in combination with the “alkaline phase” to provide a more robust product.

This combination of technologies offers a high performance micro-emulsion for the machining of cast iron, steel and aluminum alloys. The versatility of the 2PAQ technology also allows it to be used as a process cleaner — when the cleaner solution becomes saturated, instead of being disposed of, it is added to the coolant tank to aid with volume control (“top-up”). The 2PAQ technology has been shown to enhance machining performance, especially in foaming behaviour and stability of the emulsion.

At present, 2PAQ products are only produced in Europe, this technology is running in more than 60 central systems — a total

Traditional manufacturing process	The Quaker 2PAQ concept
A series of dedicated coolants	Quakercool Oil HR Quakercool W Alca
Machining centers	Machining centers
Cleaners	Quakercool W Alca
Cleaning machines	Cleaning machines
Waste treatment Evaporation Ultrafiltration Chemical treatment	
Disposal	

of 5,000 m3 installed — some for nearly five years. Customers are in the automotive and heavy equipment manufacturing industries, as well as their component suppliers for brakes, engines, gears and more. We are looking to develop 2PAQ technology in other Quaker regions as well.

The year 2012 was big for 2PAQ. It gained several new accounts, including large, global customers such as Renault, SKF, Timken and PSA. These customers are experiencing real cost savings. “Our 2PAQ product can offer as much as 90 per cent reduction in waste generation. This is dramatic, especially for customers with CNC units connected to large (100,000 or 200,000 litre) centralised systems,” says Laurent Ilievski, product manager.

Building on the success in Europe, Quaker in India is keen to promote this new concept within the Indian customers and help them in meeting their sustainability and Resource Efficient Manufacturing targets. Quaker India feels obliged to be an integral part in such efforts to preserve the natural resources and minimising the environmental impacts. ■