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**LIQUID-ICE® HP MACHINING COOLANT AND LUBRICANT**

**LIQUID-ICE® HP** is an alternative to oil-based or semi-synthetic coolants. This fully water-soluble coolant has superb cooling properties and a high grade of lubricity. **LIQUID-ICE® HP** has been formulated to provide clear, clean chip flow, with no stickiness on machinery, parts or cutting chips. The corrosion inhibitors provide the optimum in tarnish and corrosion prevention on all ferrous and non-ferrous metals. **LIQUID-ICE® HP** has been engineered to be environmentally responsible and safe to operators. It does not create mists, vapors or odors.

- Best Anti-Foaming Characteristics in the Industry, even under 1000 PSI high pressure applications.
- Increased Cooling Capability resulting in better process control and Tool Life\*.
- HP is Clean and non-sticky eliminating the need of washing machined parts before painting, welding or heat treating.
- Long sump life and easy to maintain.
- Long lasting Corrosion Protection without the need of expensive tank side additives.
- Environmentally friendly, does not create mists in the air.
- Extremely Safe for Operators and Machinery, no solvents or dyes.
- Crystal Clear in appearance allowing excellent visibility of the machining process

**Applications:** All machining applications involving ferrous and non-ferrous metals.

**Application Data:** **LIQUID-ICE® HP** should be flooding the surface of the cutting tool and material to be machined at all times.

**Recommended**

**Dilution Rates:** Concentrations for Ferrous or Non Ferrous metals (aluminum, brass, steel or stainless) ranging from 5% - 12% (19:1 – 7:1) \*Each situation will vary depending upon the specific water-hardness, type of machining and specific application.

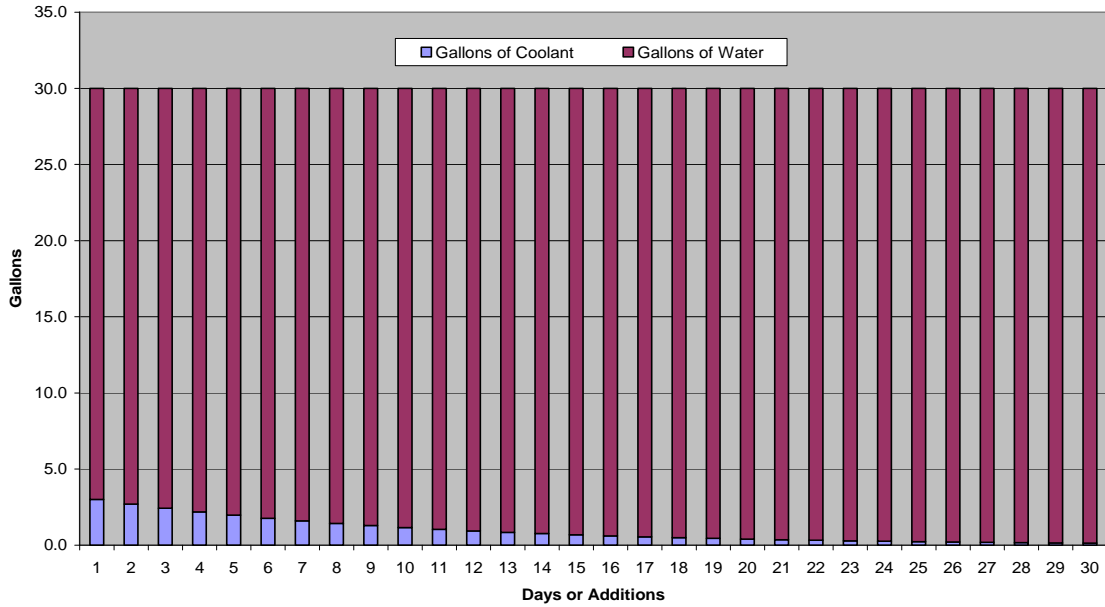
Percentage	Dilution Ratio	Refractometer
5%	19:1	1.6
6%	14:1	2.0
8%	11:1	2.6
10%	9:1	3.2
12%	7:1	3.8

It is recommended to initially charge the system at 8 – 10%, to establish a baseline performance.

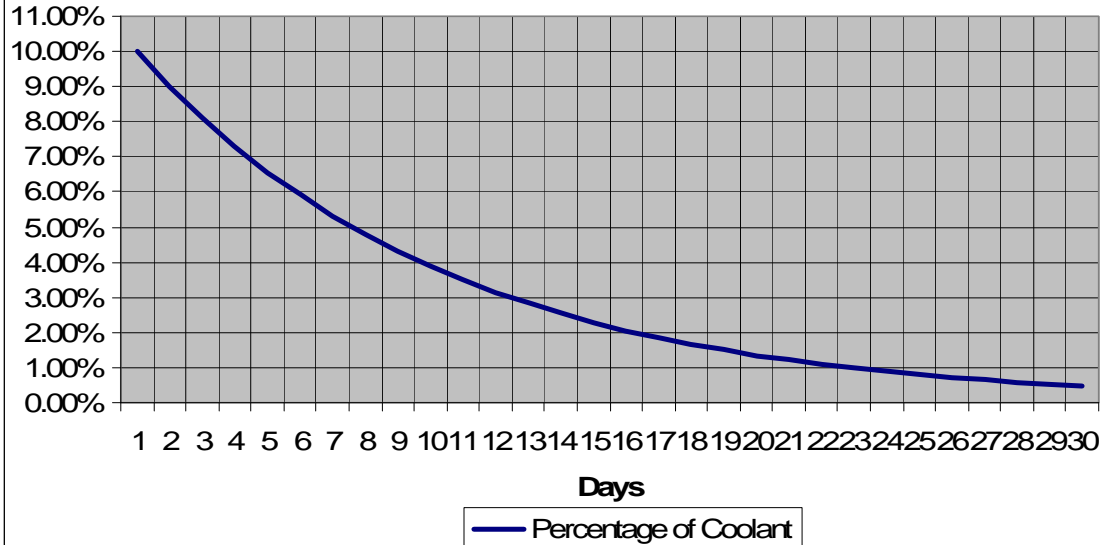


**Environmental Data:** **LIQUID-ICE® HPX**'s ingredients are highly biodegradable according to EPA, DIN, ASTM, or standard methods, are harmless to the environment, and contain no hazardous or toxic materials.

### Coolant Loss Model



### Percentage of Coolant



### ASSUMPTIONS:

SYSTEM CAPACITY 30 GALLONS; CHARGED WITH 10% COOLANT (10:1)  
 DAILY LOSS OF SYSTEM VOLUME IS 10% OF CAPACITY; OF WHICH 90%  
 IS WATER. DAILY COOLANT MAKE UP IS MADE USING WATER ONLY  
 RESULTING IN LOSS OF CONCENTRATION AS SHOWN ABOVE