

380



MACHINERY COOLANT

Description

Chesterton® 380 Machinery Coolant is a high-performance, low maintenance, synthetic metal working fluid. It provides superior lubricity and cooling for a variety of machining operations. It is recommended for alloy steels, cast irons and exotic metals. Machinery Coolant will provide protection against bacterial growth and is very tolerant to hard water.

It is usable for a broad range of machining operations ranging from slow speed applications to high speed turning. It is ideal for high precision, high quality and custom machining operations.

The excellent lubricity and coolant properties of 380 reduce heat in the chip formation process, which extends tool life when compared to conventional soluble oils and semi-synthetics.

Composition

Chesterton® 380 Machinery Coolant contains a unique, inversely soluble synthetic lubricant, which is released from solution with increasing temperature, concentrating the lubricant at the shear zone between the tool and chip interface. Thus, maximum lubrication is provided at the point where it is most needed. Friction is further reduced by anti-weld additives that combine with the metal chip surface to form an extreme pressure but low shear strength metallic salt. This dual combination, using boundary lubricants and extreme pressure additives, results in superior cutting performance.

The high thermal conductivity of 380 produces a rapid cooling of the tool and workpiece. The low cutting forces and rapid heat displacement minimizes heat build-up. This prevents chip weld back and gives excellent dimensional control of the part.

The corrosion inhibitors provide a protective barrier on machine and work piece to guard against rusting.

Typical Physical Properties

Form	Liquid	
Appearance	Clear, Transparent	
Odor	Mild	
Specific Gravity	1,08	
Solubility in Water	Complete	
pH Concentrate	9.4	
pH 4%	9.2	
Hard Water Stability	1000 ppm	
Boiling Point	100°C (212°F)	
Flash Point	(ASTM D 93)	None
Fire Point	(ASTM D 92)	None
Freezing Point	-4°C (25°F)	
Freeze Thaw Stability	Passes 3 Cycles	

Suggested Uses

Operations	Metals*
Broaching	Alloy 20
Drilling	Aluminum
Grinding	Brass
Machining	Bronze
Milling	Carbon Steel
Reaming	Cast Iron
Sawing	Copper
Tapping	Hastelloy†
Turning	High Alloy Steel
	Stainless Steel
	Titanium

* Not recommended for use with magnesium

† Haynes International, Inc. Registered Trademark

The product has internal resistance to microbial attack and is superior to soluble oils in this regard. The result is longer product life, infrequent use of biocidal additives and a major reduction in the formation of foul odors.

Chesterton® 380 Machinery Coolant does not contain mineral oil, chlorine, sulfur, PCB's, nitrites, phenols or mercurials.

Features

- Synthetic Lubricant Base
- Biodegradable
- Clear, Transparent Fluid
- Excellent Lubricity
- Superior Heat Dissipation
- Extends Tool Life
- High Detergency
- Superior Settling Prevents Recirculation of Fines
- Excellent Hard Water Stability
- Excellent Filterability
- Does Not Oil Mist
- Oil Intolerant – Rejects high % of tramp oil
- Internal Resistance to Microbial Attack
- Low Drag Out
- Concentrated, Water Dilutable
- Nonflammable

Directions

Before adding 380 Machinery Coolant to any reservoir, remove old coolant, chips and other residual matter from the system. Flush the reservoir and circulate with Chesterton® 814 Sump Cleaner & Conditioner or 218 HDP. Thoroughly rinse the reservoir with water until the pH is within .1 of make up water.

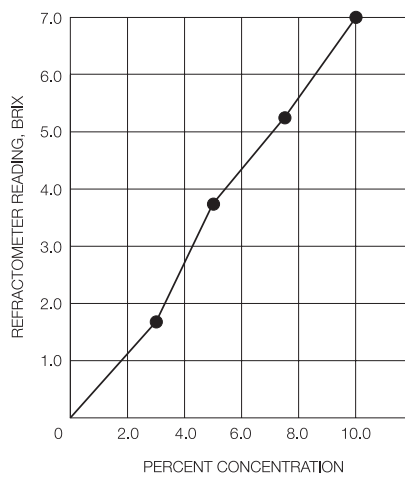
Mix the concentrated 380 into water. Do not add water to the concentrate. Pour the diluted coolant into a clean reservoir. Do not mix 380 with any other coolant.

Dilutions in excess of 4% are not recommended since the corrosion protection provided by 380 Machinery Coolant and its internal resistance to bacterial attack will be reduced.

Recommended Starting Dilutions

	Stainless Steel High Alloy Steel	Carbon Steel	Cast Iron
Broaching	10%	7%	5%
Drilling	5%	4%	4%
Grinding	4%	4%	4%
Machining	5%	5%	4%
Milling	5%	4%	4%
Reaming	10%	7%	5%
Sawing	10%	7%	7%
Tapping	10%	7%	5%
Turning	5%	4%	4%

Concentration Check



Coolant Maintenance

Chesterton® 380 is designed for minimum maintenance. It is very tolerant to hard water and resistant to bacterial attack. For maximum life, it is recommended that the concentration be checked regularly using a refractometer to insure that the mix ratio is correct.

Tank side additives are available to control foam and bacterial contamination. It is strongly recommended that only Chesterton® additives be used with 380 Machinery Coolant. Various test equipment is available to maintain control of the coolant. See your A. W. Chesterton Company representative for more information of the equipment and tank side additives.

Clean Up

Residual coolant on parts, equipment and machine tools is easily removed by rinsing with water.

Storage

It is recommended that 380 Machinery Coolant be stored at temperatures between 10°C (50°F) and 38°C (100°F). Occasional excursions beyond this range, which may occur during shipping, are acceptable. The product has a two year shelf life in unopened containers. Material is freeze/thaw stable, if frozen product will separate. Thaw completely at room temperature and stir.

Safety

Before using product, review the Material Safety Data Sheet (MSDS) or the appropriate safety sheet for your area.

Waste Disposal

Primary treatment by an oil separation or settling tank will remove solids and tramp oil. At this point, it is possible that coolant concentration adjustments could be made and the coolant reclaimed for continued use.

If reclamation is not possible, check with local authorities on the proper procedures for disposal.

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