



OAK INTERNATIONAL
Global Metalforming Fluids

OAK KLEEN 310-HD

METALWORKING CLEANER CONCENTRATE

APPLICATIONS	<p>OAK KLEEN 310-HD is a heavy-duty spray cleaner for ferrous and non-ferrous metals. OAK KLEEN 310-HD combines extremely high detergency with low operating temperature to produce a cleaner effective even on the most sensitive metals.</p> <p>OAK KLEEN 310-HD is recommended for large multiple stage tunnel washer, cleaning aluminum and zinc castings, cleaning copper parts, cleaning galvanized and galvalume parts or sheet stock, cleaning metalforming lubricants off all metals, cleaning coolants and corrosion preventives off all metals.</p> <p>Metals: Carbon Steels, High Speed Steel, Cast Steels, Alloy Steels, Tool Steel, Stainless Steel, Titanium, Cast Iron, Aluminum, Bronze, Brass, Copper</p>
COMPETITIVE ADVANTAGES	<p>LOW TEMPERATURE CLEANING</p> <p>FORMULATED TO NOT DISCOLOR OR ATTACK SENSITIVE METALS OR ALLOYS</p> <p>EFFECTIVE IN HARD OR SOFT WATER</p> <p>SAFE - Low pH formulation is easy on personnel and equipment</p> <p>ECONOMICAL – Concentrated product can be diluted for low end-use cost</p>

<p>GETTING STARTED</p>	<p>FOR INDUSTRIAL USE ONLY OAK KLEEN 310-HD is to be mixed with water for use (add concentrate to water).</p> <p>2-10% (1:50 - 1:10) by volume. 120-165°F for spray washers.</p> <p>Add no other substances to the concentrate or mix unless approved by your OAK Representative. Not recommended for use with magnesium or alloyed magnesium.</p>
<p>TYPICAL PHYSICAL AND CHEMICAL PROPERTIES</p>	<p>Physical state: Liquid Appearance and odor: Clear, soapy Color available: Green Solubility in water: 100% miscible Weight, lb/gal, 60°F (15.6°C): 9.0 Specific gravity, (H₂O = 1): 1.08 Boiling point, °F (°C): 212 (100) Flash point, COC, °F (°C): NA Fire point, COC, °F (°C): NA Extinguishing media: NA Unusual fire & explosion hazards: None Freezing point (or pour point), °F, (°C): 26 (-3) If frozen, product separates. Thaw completely at room temperature and stir thoroughly. pH, concentrate: 9.8 pH, 5.0% mix, typical operating conditions: 9.6</p>
<p>PACKAGING</p>	<p>Available in 5-gallon pails, 55-gallon drums and bulk containers.</p>
<p>For additional information concerning OAK KLEEN 310-HD, refer to its OSHA MSDS or contact OAK INTERNATIONAL at 1-269-651-9790.</p> <p>WARRANTY: Oak International, Inc. will grant credit on any product which proves defective in material or workmanship as determined by us subject to the following conditions: all material is subject to our inspection prior to issuing credit; any refund will be adjusted based on the volume of product used; no credit will be granted for used or unused product(s) over one year old as determined by the batch number. The terms in this warranty do not in any way extend to any product thereof covered by this agreement, which has a life, under normal usage, inherently shorter than the one year period indicated above. Except as set forth expressly in writing herein, there are no other warranties express or implied in respect of any product. No warranty of merchantability or fitness for purpose shall apply.</p> <p>LIMITATION OF LIABILITY: Under no circumstances shall we or any affiliate of ours have any liability whatsoever for loss of use or for any indirect or consequential damages.</p> <p>Minor formulation changes or normal variations in the manufacture of this product may cause slight variances in the data presented on this sheet. 12/7/07 REV</p>	

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