



UCON FLUIDS & LUBRICANTS

UCON Process Fluid WS

UCON™ Process Fluid WS is a heat transfer agent ideally suited for direct contact with manufactured products. It is stable in open baths up to 200°C (392°F) and transfers heat rapidly and uniformly. Process Fluid WS can be removed from parts by washing with water at temperatures under 37.8°C (100°F).

For fluids used in open baths at elevated temperatures use adequate ventilation and exhaust. See the Material Safety Data Sheet (MSDS) for Process Fluid WS for complete health and safety information.

Applications

Electronics Industry - In calibration baths for checking temperature-actuated instruments such as relays, switches, thermostats and thermistors.

Metal Industry - In the casting process as the liquid medium for curing thermosetting resins used to seal porous steel, aluminum, bronze, and zinc alloy castings.

Solar Energy - As a heat transfer fluid in solar energy heating and cooling systems.

Plastics Industry - As an annealing, stress-relieving, and curing medium for thermoplastic and thermosetting resins, such as polysulfone and nylon, epoxy, and polyethylene.

Rubber Industry - For the liquid curing of different elastomers.

Laboratories - In open controlled-temperature liquid baths used for experimental purposes.

Advantages

Water Solubility - UCON Process Fluid WS is water washable at temperatures below 37.8°C (100°F). It can, therefore, be rinsed easily without contributing films or discoloration. No expensive solvent wash and recovery systems are needed. The base-fluid is water soluble, but due to the water insolubility of the additive package, Process Fluid WS forms milky solutions in water.

Excellent Heat Transfer Properties - UCON Process Fluid WS reduces manufacturing time by providing rapid and uniform transfer of heat. It can improve product quality by facilitating control of bath temperatures within 2.0°F and by reducing hot spots.

Outstanding Thermal and Oxidative Stability - UCON Process Fluid WS gives good service life in open baths maintained at temperatures up to 200°C (392°F). It can provide even higher temperature service where contact with the atmosphere is restricted. Fluid consumption, maintenance, and system downtime are thereby reduced. UCON Process Fluid WS has less tendency to coke than petroleum-based fluids, and, therefore, has less tendency to foul heating surfaces with lacquers and deposits.

High Flash and Fire Points - UCON Process Fluid WS flashes at 465°F (Closed Cup). It is safer to use than the lower flash point petroleum fluids that require wash-and-recovery systems using organic solvents.

Shipping Data

(Subject to change without notice)

Average Weight per Gallon at 20°C, lb	8.63
Δ lb per gallon/ Δ t	0.00674 per °C
Coefficient of Expansion	
at 20°C	0.00078 per °C
at 55°C	0.00080 per °C

Type Container and Net contents:

1-gallon Rectangular Tin Can, lb	8.5
5-gallon DOT 17E Steel Pail, lb	42
55-gallon DOT 17E Steel Drum, lb	471
DOT Label	Not Regulated
DOT Shipping Label	Not Regulated
DOT Hazard Classification	Not Regulated
Resample Time, mo [†]	24

[†]Resample time is maximum number of months a material may be stored in closed drums without resampling. It is an estimated value.

Typical Physical Properties

Effective temperature operating range, °C(°F)	0 to 200(392)
Viscosity at 100°F, cSt	56
Specific Gravity 20/20°C (68/68°F)	1.037
Coefficient of Expansion	
at 20° to 250°C	7.8 x 10 ⁻⁴ per °C
at 68° to 500°F	4.2 x 10 ⁻⁴ per °F
Pour Point, ASTM D 97, °C(°F)	-54(-66)
Flash Point	
Cleveland Open Cup, ASTM D 92, °C(°F)	288(550)
Pensky-Martens Closed Cup, ASTM D 93, °C(°F)	240(465)
Fire Point, °C(°F)	315(600)
Spontaneous Ignition Temperature, °C(°F)	400(750)
Viscosity Index, ASTM D 2270-64	200
Clarity	Free from haze or turbidity
Appearance	Light, Amber Color
Particulates	Substantially free

Property Changes With Temperature

	Temperature		
	37.8°C (100°F)	100°C (212°F)	200°C (392°F)
Viscosity:			
cSt	56	11	3.4
SUS	260	64	37
Thermal Conductivity:			
Cal/hr/cm ² /°C/cm	1.41	1.33	1.20
Btu/hr/ft ² /°F/ft	0.095	0.089	0.081
Specific Heat:			
Cal/g/°C	0.48	0.52	0.56
Specific Gravity	1.024	0.976	0.909
Pounds/Gallon	8.51	8.13	7.57

Product Stewardship

When considering the use of any DOW products in a particular application, you should review Dow's latest Material Safety Data Sheets and ensure that the use you intend can be accomplished safely. For Material Safety Data Sheets and other product safety information, contact the Dow office nearest you. Before handling any other products mentioned in the text, you should obtain available product safety information and take necessary steps to ensure safety of use.

No chemical should be used as or in a food, drug, medical device, or cosmetic, or in a product or process in which it may contact a food, drug, medical device, or cosmetic until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

Dow requests that the customer read, understand, and comply with the information contained in this publication and the current Material Safety Data Sheet(s). The customer should furnish the information in this publication to its employees, contractors, and customers, or any other users of the product(s), and request that they do the same.

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