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Synmerse™ DC

A high-performing immersion cooling fluid for safe and reliable operations

Product Description

Synmerse™ DC is based on a readily biodegradable synthetic cooling fluid that offers enhanced operational safety, cooling efficiency, and reduced fluid maintenance for immersion cooling solutions in data centers. Through its excellent heat transfer efficiency, it reduces power needed for cooling.

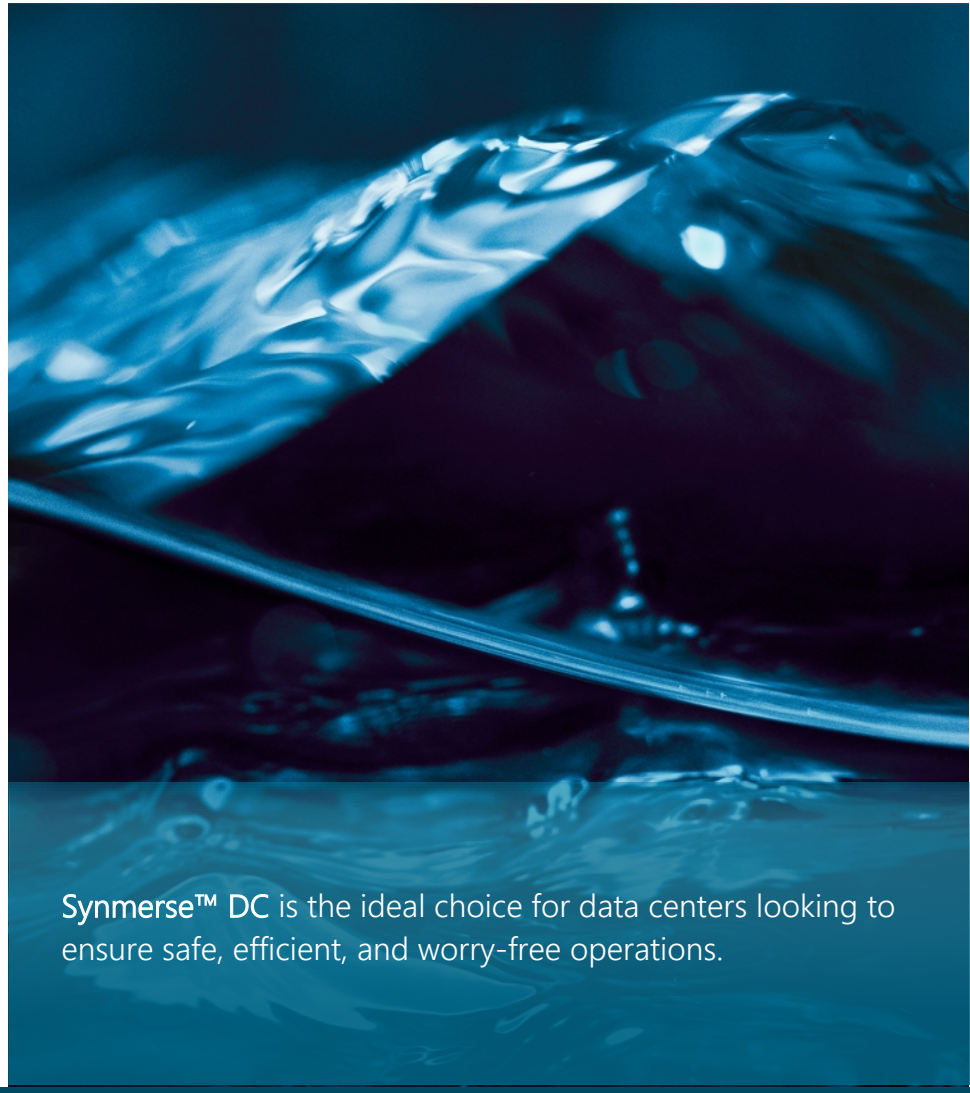
Synmerse™ DC has been developed to ensure material compatibility with next-gen computing technologies. Furthermore, the fluid is safe to use thanks to the high flash and fire point to safeguard equipment infrastructure. It is not classified as hazardous according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). As a PFAS-free alternative, Synmerse™ DC offers environmental benefits, supporting the shift towards more sustainable cooling solutions.

Segment Applications

Immersion cooling for data centers

Delivery Forms

Drums (210 kg)



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Sales Specification

Characteristics	Unit	Specification	Analytical Method[1]
Color	APHA	Max. 50	PO 105-4
Water content	%	Max. 0.10	PO 109-2
Acid value	mg KOH/g	Max. 0.05	PO 110-9

1. Analytical methods are available on request

Main Properties

Thermal management properties	Unit	Test method	OCP Specification	Typical data[1]
Density	kg/m^3	ASTM D4052	<2000	1018
Kinematic viscosity at 40ºC	mm^2/s	ASTM D445		16
Kinematic viscosity at 100ºC	mm^2/s	ASTM D445		3.6
Viscosity index		ASTM D2270		107
Pour point	ºC	ASTM D97	<-30	-69
Fire point (COC)	ºC	ASTM D92		274
Flash point (COC)	ºC	ASTM D92	>150	247
Specific heat capacity at 20ºC	kJ/kg K	ASTM D7896		1.89
Thermal conductivity at 20ºC	W/m K	ASTM D7896		0.144
Dielectric properties	**Unit**	**Test method**	**OCP Specification**	**Typical data[1]**
Breakdown voltage (1 mm)	kV	ASTM D1816		>45
Volume resistivity at 25ºC	Ωcm	ASTM D1169	>1x10^{11}	>1x10^{12}
Water content	%	ASTM D1533		0.05
Dielectric constant at 20 GHz, 25°C		Instrument[2]	≤2.3	2.25

1. Typical values are for information only and not part of sales specification
2. Keysight N1501A Dielectric Probe Kit and N1500A materials measurement software suit

Compliance

Dielectric fluid that complies with the Open Compute Project Base Specification for Immersion Fluids. Extended technical data on request.

Material Compatibility

Material compatibility with key components in servers. General material compatibility guideline available on request.

Environment and safety

The product is based on a readily biodegradable fluid (according to OECD301B). The product is PFAS-free and has zero Ozone Depletion Potential. The substance is not classified as hazardous according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Consult the Safety Data Sheet for more information.

Handling and Storage

Store in a dry and cool location, protected from direct sunlight, preferably below 30°C.

HS No.: 291560

Effective date: September 26, 2024