TECHNICAL DATA SHEET

DIESEL EXHAUST FLUID (DEF) UREA SOLUTION

AQUEOUS NOx Solution 32.5%, 40% & 50%

Properties

SDS #1135

Characteristics	Units	ISO-22241 32.5% DEF Limits		ISO-18611-1 40% DEF Limits		ISO-22241 50% DEF Limits	
		min.	max.	min.	max.	min.	max
Urea Content	%	31.8	33.2	39	41	49	50.2
Alkalinity (as NH3)	% by weight	-	0.2	-	0.5	-	0.31
Biuret	% by weight maximum	-	0.3	-	0.8	-	0.46
Insoluble matter	mg/kg	-	20	-	50	-	30.8
Aldehydes	mg/kg	-	5	-	100	-	7.7
Phosphate	mg/kg	-	0.5	-	1	-	0.77
Aluminum	mg/kg	-	0.5	-	-	-	0.77
Calcium	mg/kg	-	0.5	-	1	-	0.77
Iron	mg/kg	-	0.5	-	1	-	0.77
Copper	mg/kg	-	0.2	-	-	-	0.31
Zinc	mg/kg	-	0.2	-	-	-	0.31
Chromium	mg/kg	-	0.2	-	-	-	0.31
Nickel	mg/kg	-	0.2	-	-	-	0.31
Magnesium	mg/kg	-	0.5	-	1	-	0.77
Sodium	mg/kg	-	0.5	-	1	-	0.77
Potassium	mg/kg	-	0.5	-	1	-	0.77
Density at 68F	lbs/gal	9.07	9.12	9.22	9.82	N/A*	N/A*
Refractive Index at 68F		1.3814	1.3843	1.3947	1.3982	N/A*	N/A*
Salt-Out Temperature	°F (°C)	12(-11)		32(0)		64(18)	
Recommended Storage Tempurature	°F (°C)	40 (4.5)	80 (26.6)	40 (4.5)	80 (26.6)	40 (4.5)	80 (26.6)

*These characteristics can not be compared to the limits set by ISO 22241 due to the product's physical properties. The necessary sample analysis temperature of 20C(68F) for the ISO 22241 limits is too close to the salt out temperature of the product to allow accurate analysis at that temperature. Analysis is performed at a higher temperature to prevent salt out and give the most accurate results.

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AQUEOUS NOx Solution 32.5%, 40% & 50%

PRODUCT DESCRIPTION

DEF (Diesel Exhaust Fluid) Urea Solutions are produced by combining pure liquid urea from the urea process with clean plant steam condensate to produce the desired concentration. The resulting DEF solution is free of any chemical additives such as formaldehyde. DEF is effective in controlling the emission of nitrogen oxides from stationary sources such as power plants as well as from diesel powered cars, trucks, trains, ships and heavy equipment. DEF is non-toxic, non-hazardous and formaldehyde free. Our DEF 32.5% meets ISO standard 22241-1. DEF 40% meets ISO standard 18611-1:2014(E). DEF 50% meets limits that are calculated from ISO22241-1.

APPLICATION RECOMMENDATIONS

- DEF Urea solutions are marketed as ultra clean liquid fuel for catalytic abatement of nitrogen oxide emissions.
- The decomposition of DEF Urea solution into ammonia, carbon dioxide and steam provides a safe way to produce the ammonia fuel source. There is no need to have containers of compressed liquid ammonia in remote locations that are difficult to secure.
- Consult your Dyno Nobel representative for additional information.

TRANSPORTATION, STORAGE AND HANDLING

- The transport of DEF Urea solution does not require a DOT placard.
- DEF Urea solution will decompose into ammonia, carbon dioxide at 275 °F.
- ALWAYS thoroughly wash vessels containing DEF Urea solution before attempting repairs requiring welding.

Hazardous Shipping Description

- There are no DOT restrictions, other than weight, to transport UREA solutions
- Consult MSDS #1135 for more specific and comprehensive information about chemical hazards

ADDITIONAL INFORMATION – Visit **dynonobel.com** for Brochures and Case Studies related to this product.

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