

# ESG Sustainability

## Carbon Footprint Reduction, the ZL Difference

ZL Dry FR reduces your carbon foot print by **AN ADDITIONAL 67%**

At ZL, we manufacture Friction Reducers that have a direct impact on reducing our client's costs and their environmental impact. Our portfolio of Dry, High Viscosity Friction Reducers are designed to perform in all brines, and they eliminate 100% of the carrier fluids which make up the bulk of most FR emulsions. This means significantly fewer truck trips to complete the same job.

When replacing your conventional liquid FR emulsion with our Dry FR product, we typically see transportation volume reductions of 3 to 1. See below for more details of how our Dry FR has helped minimize our client's environmental impact and carried out our commitment toward ESG.

### 10 typical jobs @ 100 K gals of FR

	Emulsion FR	ZL Dry FR
Lbs of FR Used	8,900,000	2,937,000
Number of Truck Trips	212	70
Number of Miles <small>(using assumption of 200-mile radius for last mile delivery)</small>	42,400	14,000
Total CO <sub>2</sub> Emissions (lbs)	189,952	62,720
<b>Additional Carbon Reduction by Removing Mineral Oil</b> <small>(Assuming typical emulsion contains about 45% mineral oil, 86% carbon emission from mineral oil)</small>		4,005,000
<b>Total CO<sub>2</sub> Reduction (lbs) by using Dry FR = 67%</b>		127,232

Engineered For a Sustainable Future



ZL CHEMICALS LTD  
Exceeding Your Expectations

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