

	ALL (Fluids)	ALL (Grease)	PLL (Fluids)	PLL (Grease)	TLL (Fluids)	TLL (Grease)	EEL Biodegradation	EEL Aquatic Toxicity
<b>Base Fluids</b>								
FUNCTIONAL V-5019	100	100	100	100	100	100	99% A, 1% C	100% D
FUNCTIONAL V-5048	100	100	100	100	100	100	99% A, 1% C	100% D
<b>Viscosity Modifiers / Pour Point Depressants / Viscosity Improvers</b>								
FUNCTIONAL PD-585	6.1	18	24	18	6.1	18	18% A, 82% C	100% D
FUNCTIONAL V-188P2	5.2	5.3	5.3	5.3	5.2	5.3	97% C, 3% A	100% D
FUNCTIONAL V-508	30	30	30	30	30	30	85% A, 15% C	100% D
FUNCTIONAL V-508F	25	25	25	25	25	25	70% A, 30% C	100% D
FUNCTIONAL V-508M	16	25	25	25	16	25	80% A, 20% C	100% D
FUNCTIONAL V-508A5	20	40	40	40	20	40	75% A, 25% C	100% D
FUNCTIONAL V-515	50	100	100	100	50	100	90% A, 10% C	100% D
FUNCTIONAL V-521	28	83	100	83	28	83	82% A, 18% C	100% D
FUNCTIONAL V-521L	62	100	100	100	62	100	92% A, 8% C	100% D
FUNCTIONAL V-584	20	20	20	20	20	20	95% A, 5% C	100% D
FUNCTIONAL V-731	3.3	3.3	3.3	3.3	3.3	3.3	97% C	97% D
FUNCTIONAL V-732	3.7	3.7	3.7	3.7	3.7	3.7	97% C	97% D
FUNCTIONAL V-830	5	15	20	15	5	15	100% C	100% D
<b>Grease Thickener</b>								
FUNCTIONAL V-4051	--	45	--	45	--	45	67% A, 33% C	100% D
<b>Antifoam / Demulsifier / Dispersant</b>								
FUNCTIONAL DF-400	9.8	--	9.8	--	9.8	--	52% A, 48% C	100% D
FUNCTIONAL DF-500	20	--	20	--	20	--	95% A, 5% C	100% D
FUNCTIONAL DM-400	5	9.6	9.6	9.6	5	9.6	99% C	99% D
<b>Complete Additive Package</b>								
FUNCTIONAL GA-533	5.6	17	22	17	5.6	17	8% A, 90% C	100% D
FUNCTIONAL HF-595	2.2	2.2	2.2	2.2	2.2	2.2	80% C	78% E
FUNCTIONAL SGP-563	7.6	23	30	23	7.6	23	34% A, 65% C	99% D

**Overview**

Each component on the LuSC list carries an EEL Rating for biodegradation and aquatic toxicity i.e. "100% A / 100% D".

The final formula and its components must meet:

- minimum wt% of components meeting certain biodegradability status (A, B, C, X)
- maximum wt% of components with aquatic toxicity hazards (D, E, F, G)
- minimum technical performance, based on the type of product (hydraulic, bar&chain, etc.)

The limits vary based on the product category (PLL, ALL, TLL) and if it is a grease.

**Product Categories for Finished Lubricants or Greases**

Product categories are defined by their likelihood of loss to the environment based on the use.

**PLL** = Partial Loss Lubricant

Open gear oils, stern tube oils, two-stroke oils, oils for temporary corrosion protection

**ALL** = Accidental Loss Lubricant

Hydraulic fluids, metalworking fluids, gear oils for closed gears

**TLL** = Total Loss Lubricant

Chainsaw oils, wire rope lubricants, concrete release agents

**Minimum Required wt% EEL Biodegradation by Product Category****EEL Biodegradation Rating**

**A** - Readily biodeg.; not bioaccumulative

**B** - Inherently biodeg.; not bioaccumulative

**C** - Not biodegradable; not bioaccumulative

**X** - Not biodegradable; bioaccumulative

PLL Fluids	ALL Fluids	TLL Fluids	Any Grease
>75%	>90%	>95%	>80%
≤ 25%	≤ 10%	≤ 5%	≤ 20%
≤ 20%	≤ 5%	≤ 5%	≤ 15%
≤ 0.1%	≤ 0.1%	≤ 0.1%	≤ 0.1%

**Maximum Allowed wt% EEL Aquatic Toxicity Limits by Product Category**

EEL Toxicity Rating	PLL Fluids	ALL Fluids	TLL Fluids	PLL Grease	ALL Grease	TLL Grease	Aquatic Toxicity Test Limit (mg/L)
<b>D</b> - 'Non-Toxic'	No limit	No limit	No limit	No limit	No limit	No limit	>100 for fish, invertebrate, and algae
<b>E</b> - 'Harmful'	≤ 10%	≤ 10%	≤ 2%	≤ 15%	≤ 20%	≤ 10%	10-100 acute, 1-10 chronic
<b>F</b> - 'Toxic'	≤ 0.6%	≤ 2.5%	≤ 4%	≤ 0.6%	≤ 1%	≤ 0.4%	1-10 acute, 0.1-1.0 chronic
<b>G</b> - 'Very Toxic'	≤ 0.1%	≤ 0.1%	≤ 0.1%	≤ 0.1%	≤ 0.1%	≤ 0.1%	<1 acute, <0.1 chronic; use M factor

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