

## PANOLIN STELLA MARIS

### Compliance of EPA Vessel General Permit 2013

<b>PANOLIN STELLA MARIS, ISO VG 68/100/150/220/320</b>				
Characteristics of test	Units	Specification	<b>Result</b>	Method
Biodegradability <sup>a</sup>	% ThOD	>60	<b>&gt;60</b>	ASTM 5864, OECD 301, 306
Toxicity <sup>b</sup>				
Algae	LC <sub>50</sub>	>100 mg/l	<b>&gt;100</b>	OECD 201
Daphnia	EC <sub>50</sub>	>100 mg/l	<b>&gt;100</b>	OECD 202
Fish	LC <sub>50</sub>	>100 mg/l	<b>&gt;100</b>	OECD 203
Bioaccumulation <sup>c</sup>	log K <sub>ow</sub>	<3 or >7	<b>pass</b>	OECD 107, 117
Visible sheen	Gloss, visual color etc.	- <sup>d</sup>	<b>no visual color</b>	58 FR 12507

- a** VGP accepts result based on formulation and main constituents  
– see Appendix A, VGP 2013 final version
- b** VGP accepts testing of formulation – see Appendix A, VGP 2013 final version
- c** OECD test method valid for single substances testing only; data reported should be seen as a summary of all single > 1 % components in stated formulation
- d** Report

Assessment in accordance to requirements of Vessel General Permit 2013



EPA test requirements state, all vessels must use an EAL in all oil to sea interfaces. "Environmentally Acceptable Lubricants" means lubricants that are "biodegradable" and "minimally-toxic" and are "not bioaccumulative" as defined in Appendix A of the Vessel General Permit. PANOLIN has conducted the EPA test requirements for all standards described in the 2013 Vessel General Permit (review above chart for test results)