

GREENWORLD s.à.

Greenseal E®

Ref.catalogue E-02

USES – TYPICAL VALUES - INFORMATIONS

USE

ADDITIF TO IMPROVE THE MECHANICAL AND CHEMICAL PROPERTIES OF BITUMEN FROM PARAFFINIC AND NAPHTENIC SOURCES

HIGH ACID -, SAPONIFICATION- and IODINE VALUES »

PRO- & PREEMULSIVE FUNCTION

NON -VOLATILE FLUXING PROPERTY

TYPICAL VALUES

Properties	Methods	Units	Typical values
viscosity at 77°F/25°C	EN 1359-2	m.Pa.s	60
specific gravity at 59°F/15°C	DIN 51757	g/cm ³	0,9350
flashpoint	EN-ISO 2719	°F / C	356/180
Indexes			Flexible values
saponification index	ASTM D803-15	mg KOH/g	120
acid value	Iso 1242	mg KOH/g	75
iodine value	NF EN ISO 3961	g/100g	135
IR _e		ppm	1545000
Fatty acids and their Esters		%	> 99,8

INFORMATIONS

DOSE

INSOLUBLE IN THE AQUEOUS PHASE , ADD DIRECTLY TO BITUMINOUS BINDERS

**depending on the applications and requirements of the types of emulsions :
0,15 – 0,3 %**

SOLUBILITY : Greenseal E is totally soluble in all bitumen,
Following the great diversity of modified bituminous binders, we recommend a laboratory solubility check before using on industrial level.

REACTIVITY : Greenseal E , ternary mixture, liquid at 40°F/5°C, composed by middle- and heavy distilled fatty acids and their esters improves the chemical and mechanical properties of the paraffinic and naphtenic bitumen.
They are appointed by the concentration of measurable organic radicals mentioned in the table herunder :

IA acid index	IS saponification value	II Iodinevalue	*IRe/ ppm
75 mgKOH/g	120 mgKOH/g	135 gI2/100g	1545000
ASTM D465	ASTM D803-15	NF EN ISO 3961	Σ IA+IS+II

IA = carboxylic acids : « $R-COOH$ » ,
II = double carbonbindings : « $R>C=C<R$ »
IS = esterified fatty acids : : « $R-COOR$ » ,

forming all together a « ***REACTIVITY POWER (Ire) = 1545000 ppm** ».of organic acids that added with paraffinic bitumen provides much better properties as the naphtenic ones.

TOXICOLOGY : GREENSEAL E is free of dangerous, toxic and volatile compounds which safeguards the road people and riverians against exposure of harmful vapors and PAC..

CARBON FOOT PRINT

(based on the values from the producers of the substances used in GREENSEAL E)

Greenseal	* + Cfp /CO2 e/kg	- Cfp:CO2 e/kg..	** Net – Cfp result CO2 e/kg
Type E	+0,395	-1,463	-1,068

* +Cfp values based on emissions during transport of crudes to the yard, their process, confection, storage and transport to : our shaping & tolling company, and to our exclusiv trader but, are unavailable for shaping and tolling.

Biogenic carbon released

** -The photosynthesis with CO2 captation from the atmosphere during the pinetree life, is fixed by EN-ISO 14967-2018 -and EN 16785-1-2015 ,according LCA-14040-14044-ecoinvent (version 38-of 21/09/2021-GHG protocol.) -

The use of their substances with negativ Cfp values in the Greenseal E contributes to the assimilation of a friendly ecological label.

CERTIFICATION : GREENSEAL E is produced following ISO 9001 norm in an ISO 14001.certified workshop

REGISTRATION : All substances used in the GREENSEAL E are « **REACH** » registrated by the producers, it follows of that registration for Greensseal E is superfluous..

PACKAGE :: in closed, sealed and numbered IBC of 900 kg or BULK min.20 t.

TRANSPORT : Mixture with a flash point above > 213°F/100°C. and delivered in IBC at ambient temperature or in bulk from ambient to lower than < 213°F/100°C.

STORAGE : Greenseal E is fluid at >40°F/5°C, prolonged storage at this temperature may form a solidification which liquefies upon heating (electric plugger) and without changing its initial properties.

SHELF LIFE : Greenseal E, packaged in closed IBCs, has a shelf life of 8 years from its date of manufacture.

Its physicochemical properties remain unchanged, thus its original applications are not affected.

EC CODIFICATION OF CUSTOMS DECLARATION

Y 106 by REACH restrictions defined in column 2 of Annex XVII of Regulation EC-907/2006.

CUSTOM TARIFF : 38 23 13 00

PRODUCER &-TRADING :

GREENSEAL E ® is elaborated and produced by

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GREENSEAL E ® is exclusively traded by

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