GREENWORLD s.à.r.l

GREENSEAL BT

Ref.Catalogue : B20

USE – APPLIES – TYPICAL VALUES – INFORMATIONS

USE

TRIFUNCTIONAL DOPE FOR BITUMINOUS BINDERS

APPLIES

Fluxing dope for **confection of low temperature asphalt ≥ 105°C/221°F**
Dope for **workability of asphalt** up to **≥ 70°C/158°F**
Dope for **dispersion and wettability** for high viscous binders in asphalt

TYPICAL VALUES

Characteristics	Méthods	Units	values
Viscosity at 25°C/77°F	EN 13072-2	m.Pa.s	100
Specific gravity at 15°C/59°F	DIN 51757	g/cm³	0,9500
Flash point	EN-ISO 22719	°C/°F	187/368
Indexes			Flexibel values
saponification (IS)	ASTM D803-15	mg KOH/g	120
acid (IA)	ISO 1242	mg KOH/g	30
Iodine (II)	NF EN ISO 3961	gI_2/100g	125
IRe (Reactivity index)	Σ IA + IS + II	ppm	1400000
fatty acids and their esters		%	> 99,6

INFORMATIONS

DOSES

,used for **confection of low temperature asphalt ≥ 105 °C-221°F**

GREENSEAL BT added to bitumen
0,8 – 1,2 % in relation to the bitumen content in the asphalt

used as dope for **workability of asphalt** up to **≥ 70°C/158°F**

GREENSEAL BT added to bitumen
0,15 - 0,3 % in relation to the bitumen content in the asphalt .

used for higher **dispersion and wettability of the binders**

GREENSEAL BT added to modified binders or bitumen PEN < 40
0,1 - 0,25 % in relation to the bitumen content in the asphalt

REACTIVITY

GREENSEAL BT **:** binary compound, liquid at 10°C/50°F , of heavy distillates of fatty acids and their esters, classified and **measured** following the hereunder **radicals** : :

IA = carboxylic acids *« R- COOH » ,*
IS = *esterifyed fatty acids « R – COOR*
II = double bindings **«** *R > C = C < R »*

and quantifyed by Greenworld as a ***reactivity index* (IRe)** = 1400000 ppm obtained bij adding together all the radicals (see the table below)

IA Acid value	**IS saponification index**	**II Iodine value**	*IRe/ ppm
30mgKOH/g	120 mgKOH/g	125 gI2/100g	**>1400000**
ISO 1242	ASTM D803-15	NF EN ISO 3961	Σ IA+IS+II

The radicals of GREENSEAL BT modify the molecular structures of bitumen, contributing to an increase of the **polarity** of the bitumen, resulting in better **adhesivity** of the mineral aggregates and also a higher cohesion of the asphalt.

Add to the bituminous binders , GREENSEAL BT has a significant impact on the **rheology** of bituminous binders, increasing their **penetrability**, reducing exponentially their **viscosity** at low temperature while having practically no influence on their **R&B**.

The herefore mentioned characteristics improve the **wettability and dispersion** of bituminous binders within the mineral aggregates: giving excellent **workability** to the asphalt and **optimal compaction**. up to **≥ 158°F / 70 °C** , allowing a significant reduction in the number of passes of the compactor and faster use of the road..

The **workability** property due to the **non-volatile fluxing power** of GREENSEAL BT modify the viscosity of the bitumen at low temperature allowing the **confection** *of* ***low temperature asphalt at ≥ 105°C*****,** assuming to these asphalt equivalent and superior mechanical and chemical properties to those of hot rolled asphalt .

The low temperature manufacturing makes it possible to **reduce *binder consumption*** due to the fact that the binderfilm distributed on the surfaces of the mineral aggregates of the asphalt is ***less oxidized*** than those made at high temperatures with so better and extended properties of the asphalt..

SOLUBILITY

GREENSEAL BT is completely soluble in all bitumen,
Following the great diversity of modified bituminous binders, we recommend a laboratory solubility check before using on industrial level.

ENVIRON

Compare with the confection of hot rolled asphalt , GREENSEAL BT assumes the confection of ***low temperature asphalt*** ≥ 105°C/221°F,reducing immission of combustion fumes and finally promoting ***a lower carbon footprint value of the plant****.and* ***asphalt.***

CARBON FOOT PRINT

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

Greenseal	* + Cfp /CO_2 e/kg *	**- Cfp:CO_2 e/kg..	Net – Cfp result CO_2 e/kg
Type BT	+0,536	-2,038	-1,502

* +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 trader, note unavailable Cfp values for shaping.and tolling.

Biogenic carbon deleased

****-**The photosynthesis with CO_2 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 BT contributes to the assimilation of a friendly ecological label.
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CERTIFICATION

GREENSEAL BT is manufactured according to the *ISO 9001 standard* in an *ISO 14001 certified workshop.*

TOXICOLOGY

GREENSEAL BT,free from toxic,harmful materials and vapors, used for producing low temperature asphalt ≥ 105°C/221°F, saveguards road staff and riverians against their exposures of « blue smoke » and protects the environmental, fauna and flora.

PACKAGE *:*

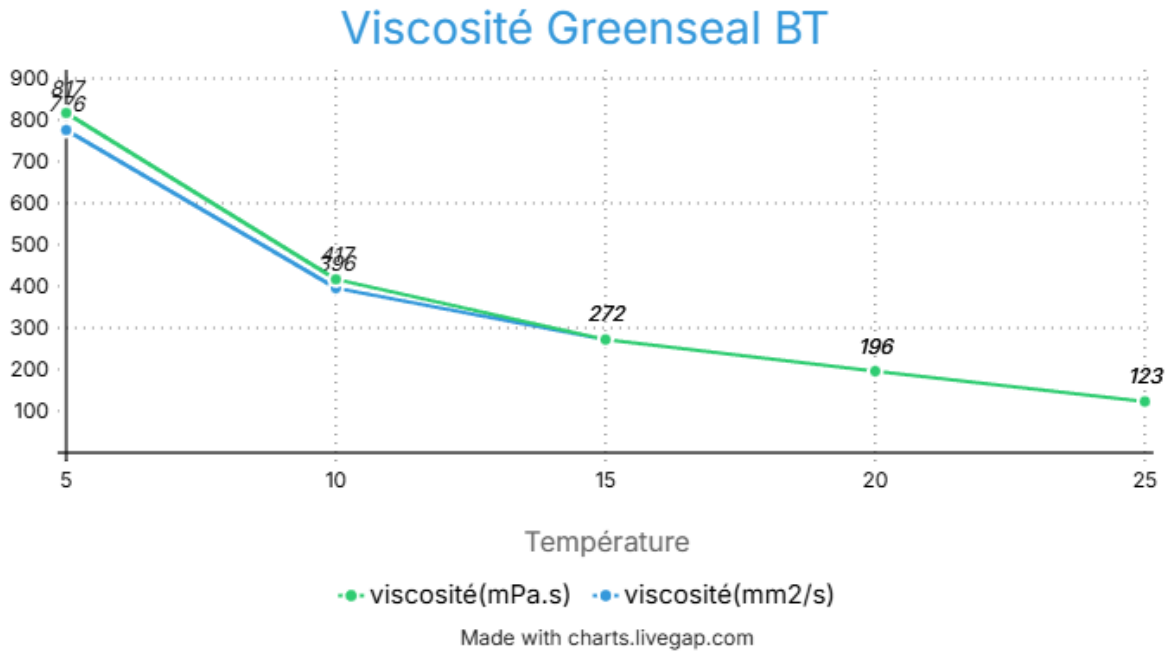
IBC = 900 kg – bulk min.18 t

TRANSPORT_

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

STORAGE

Store IBC in a close area > 5°C, prolonged storage at this temperature may form a solidification which liquefies upon heating (electric plugger) without changing its initial properties.



EC CODIFICATION CUSTOMS DECLARATION

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

CUSTOM TARIFF

38070090

PRODUCER &-TRADING : GREENSEAL BT ,

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