

# GREENSEAL BT

Ref.Catalogue : B20

## USE – APPLICATIONS – SPECIFICATION – DOSAGES – REACTIVITY - INFORMATIONS

### USE

**TRIFUNCTIONAL ADDITIVE FOR BITUMINOUS BINDERS**

### APPLICATIONS

**Additive for working up asphalt till 160°F / 70 °C**

**Additive for manufacture of low temperature asphalt at  $\geq$  220°F/105°C**

**Additive for higher wetting and dispersion of bitumen in aggregates**

### SPECIFICATIONS

Characteristics	Méthods	Units	Typical values
Viscosity at 75°F /25°C	EN 13072-2	mPa.s	85
Specific gravity at 60°F/15°C	DIN 51757	g/cm <sup>3</sup>	0,95
Flashpoint	EN-ISO 22719	°F/°C	365/185
Saponification number	ASTM D803-15	mg KOH/g	152
Acid number	ASTM D465	mg KOH/g	44
Iodine number	NF EN ISO 3961	gI <sub>2</sub> /100g	128
IRe		ppm	1476000
Fatty acids and their esters		%	> 99

### DOSAGES

-for **HANDLING** the asphalt > **160 °F/ 70°C**, added to bitumen

**dosage : 0,15 – 0,3 %** related to the binder amount

-for **MANUFACTURING** low temperature asphalt at  $\geq$  **220°F / 105°C**,

**dosage : 0,8 – 1,0 %** added to bitumen but related to the binder amount in asphalt .

## FLUXING POWER

« **GREENSEAL BT** » liquid at 23°F / 5°C , is a binary mix of middle and heavy distillates of fatty acids and their esters.

Added to bituminous binders **GREENSEAL BT** has an impact on their rheology by increasing the penetrability and decreasing the viscosity at lower temperature, useful for a better **wetting** and **dispersion** to the mineral aggregates and providing an excellent **working up of the asphalt** till 160°F / 70°C assuming so an **optimal compactness** of the asphalt.

## REACTIVITY POWER

The table herunder mentions the measureable radicals of the fatty acids in the **GREENSEAL BT**.

IA	IS	II	IRe/ ppm
44 mgKOH/g	152 mgKOH/g	128 gl2/100g	<b>1476000</b>
ASTM D465	ASTM D803-15	NF EN ISO 3961	Σ IA+IS+II

**IA** = carboxyl radical « R- COOH »,

**II** = double carbon binding «  $R > C = C < R$  »

**IS** = esterified fatty acids « R – COOR »,

together they forms a **REACTIVITY POWER = IRe = 1476000 ppm** who modifies chemically the molecular structures of bitumen and also increases the original radicals in the bitumen and thus also his **polarity** and consequently his **adhesivity** regarding the mineral aggregates and higher **cohesion** of the asphalt...

The accumulated impact of **GREENSEAL BT** on the rheology of bitumen and the chemical modification of their molecules allows the production of **low temperature asphalt** at **220°F /105°C** with **equivalent** mechanical and physical performances as hot asphalt..

## INFORMATIONS

**ENVIRONNEMENTAL** : **GREENSEAL BT** is fully favorable for the environment and the **carbon footprint** of the plant by contributing to production of low temperature asphalt.

**TOXICOLOGY** : **GREENSEAL BT**, free of dangerous and harmful materials and allowing production of low temperature asphalt does not release « blue smoke » favourable for the highway workers , environment, fauna and flora.

**CERTIFICATIONS** : **GREENSEAL BT** is made in accordance with ISO 9001 norm in a workshop certified ISO 14001 and their present substances are « REACH » registered by the producers..

**HISTORY** : **GREENSEAL BT**, earlier named GREENSEAL F ( ref B10 ), was developed by GREENWORLD s.à.r.l. in October 2006 and is exclusively commercialized by s.à.MECAROUTE.

**PACKAGING** : IBC = 900 kg or loose by min.18 t