

GREENSEAL AR

Ref.Catalog AR3037

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USE

TRIFUNCTIONAL ADDITIVE FOR BITUMINOUS BINDERS

APPLICATIONS

INCREASING BITUMEN ADHESIVITY AND COHESION OF ASPHALT.

BINDER RESTORING OF REPAVED ASPHALT

**CONFECTION OF LOW TEMPERATURE RECYCLING ASPHALT at
≥ 250°F / 120°C**

SPECIFICATIONS

Characteristics	Méthods	Units	Typiscal values
Viscosity at 75°F/25°C	EN 13072-2	m.Pa.s	60
Specific gravity at 60°F/15°C	DIN 51757	g/cm ³	0,9300
Flashpoint	EN-ISO 22719	°F/°C	355/180
Saponification value	ASTM D803-15	mg KOH/g	110
Acid value	ASTM D465	mg KOH/g	120
Iodine value	NF EN ISO 3961	gl ₂ /100g	143
IRe		ppm	1660000
Fatty acids an their esters		%	> 99

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DOSAGES

as ADHESIVE

Greenseal AR added to binder

0,15 – 0,3 % relative to the binder amount in asphalt

as RESTORING additive

repaved asphalt	fresh asphalt
Q = < 50 %	Q = > 50 %
both asphalts in mixing drum	
Greenseal AR added to bitumen of the new added asphalt	
0,8 – 1,0 % relative to the binder amount of the recycling asphalt	
confection of low temperature recycling asphalt ≥ 250°F / 120°C	

repaved asphalt	fresh asphalt
Q = > 60 %	Q = < 40 %
Greenseal AR in parallel mixing drum	Greenseal AR in mixing drum
0,8 – 1,0 % relative to the binder amount	0,2 – 0,4 % relative to the binder amount
confection of low temperature recycling asphalt ≥ 250°F / 120°C	

REACTIVITY

GREENSEAL AR, liquid at 40°F / 5 C, is a ternary preparation composed by light and heavy distillates of fatty acids and their esters whose concentrations of active compounds are measured and mentioned under radicals in the table herunder :

IA	IS	II	IRe/ ppm
120 mgKOH/g	110 mgKOH/g	143 gl2/100g	1660000
ASTM D465	ASTM D803-15	NF EN ISO 3961	Σ IA+IS+II

IA = carboxyl- groep « R- COOH »

II = double carbon bindings « R > C = C < R »

IS = esterified fatty acids « R – COOR »

together they have a potential **REACTIVITY POWER (IRe) = 1660000 ppm**

The IRe works positively on the molecules of the bituminous binders of the repaved asphalt but also on the fresh asphalt by modifying their molecular structures, increasing their **polariry** also improving higher **wetting** and **dispersion** of the binders to the mineral aggregates and providing finally better **adhesivity** and **cohesion** of the asphalt.

The fluidifying property of **GREENSEAL AR** decrease the viscosity of the binders at lower temperature and increase their penetrability and his reactivity power restores and improves the original properties of the repaved asphalt and those of the fresh one and allows to prepare at **≥ 250°F / 120°C** low temperature recycling asphalt restauing > 60 % repaved asphalt.

Good mechanical and physical performances depend on the quality and quantity repaved asphalt and those of the fresh asphalt used into the recycling asphalt both fixed by a preliminary study of a formule and resulting with favourable mechanical essays on the recyled asphalt.

The high reactivity power of GREENSEAL AR allows several MULTIRECYCLING applications of repaved asphalt comming from recycling asphalt.

INFORMATION

ENVIRONMENTAL : **GREENSEAL AR** by producing low temperature recycling asphalt is fully favorable for the environement with convenient **carbonfootprint** for the plant and **life cycle analyses** for the asphalt.

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

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

HISTORY : **GREENSEAL AR** developped and produced by GREENWORLD s.à.r.l. is since September 2016 exclusively commercialized by MECAROUTE s.à.. For this time two preparations were used for the same goal : GREENSEL A (ref A30) and GREENSEALR (ref.R37) respectively used in August 2014 as adhesive and in September 2014 as rejuvenator for repaved asphalt.

PACKAGING : IBC = 900 kg or in bulk by min.18 t. an