POWSIL™-59100

Hydrophilic Silicone Softener

Introduction

POWSIL-59100 is an innovative textile softener, especially designed to deliver a hydrophilic, voluminous and silky natural hand feel to most types of fabrics at lower use level than traditional silicone softeners. It is based on novel linear block-copolymer platform comprising polyether & quaternary functional silicone copolymer which not only coats the fiber surface, delivering on unusual full and rich hand-feels, but also penetrates deeply and homogeneously into the interior of the natural fibers, modifying every single fiber and therefore enhancing the overall fabric performance.

Benefits

- ☐ Linear block copolymer structure that provides excellent dispersion/spreading & penetration properties on fibers;
- ☐ Imparts natural voluminous and silky softness as opposed to a thin, greasy & slick hand feeling as seen from traditional amino silicone;
- ☐ Excellent fiber elasticity and shape recovery;
- ☐ Deeply penetrates into fibers to impart internal softness;
- ☐ Superiorly durable softness to laundering;
- ☐ Less fabric yellowing;
- ☐ Good hydrophilicity;
- ☐ Shear stable formulations;
- ☐ Easy to make microemulsions;
- ☐ Outstandingly exhaustible to particularly natural fibers;
- ☐ Suitable for both padding and exhaustion finish process;
- ☐ Non or less oil spots when applying emulsions on fabric;
- ☐ Excellent affinity on all types of textile;
- ☐ Re-dyeable & over dyeable.

Typical Physical Properties

Property	Value
Physical Form	Pourable liquid
Appearance	Transparent
Solid Contents (wt%)	~85
Viscosity (25°C, cps)	＜20,000
pH(25°C)	5.0-7.0
Flash Point(°C, Open)	＞100

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Diluents	Emulsifiers & Water
Gravity(25°C)	0.993
Ionic	Slightly cationic

Application

Since POWSIL-59100 is a silicone oil that cannot be applied directly on fabrics. It should be emulsified before applying in the textile finish process. However, emulsifying it is much easier than emulsifying other silicone fluids conventionally used in the application of textile softener. POWSIL-59100 can be readily emulsified using normal equipment and procedure.

Micro-emulsion for 24.0% of POWSIL-59100

1) Formulation

Composition	% wt
POWSIL-59100	24.0
TDE-6 or AEO-6*	6.0
Acetic Acid	0.3
Water	69.7

Preservative if required ~

*- TDE-6: Tridecyl Alcohol 6EO ethoxylated
- AEO-6: Fatty alcohol ethoxylated with 6 EO

2) Procedures:

1) Stir POWSIL-59100 content to make it homogeneous;

2) Charge POWSIL-59100 and TDE-6 or AEO-6 into a mixer, and then stir the contents at moderate speed for about 10 min till fully homogeneous;

3) Premix acetic acid and water;

4) Slowly add the acidic water while continuously stirring POWSIL-59100 and TDE-6 or AEO-6 in the mixer. Stop charging the acidic water occasionally to ensure the water is well absorbed into the grease;

5) Clear micro-emulsion should be obtained at end of this procedure;

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6) Filter before packing, if necessary.

Micro-emulsion for 38% of POWSIL-59100

1) Formulation

Composition	% wt
POWSIL-59100	38.0
TDE-6*	10.0
TDE-12**	2.2
Butyl Carbitol	2.0
Water	46.8
Acetic Acid	1.0

Preservative if required ~

* TDE-6: Tridecyl Alcohol 6EO ethoxylated (CAS # 24938-91-8)
** TDE-12: Tridecyl Alcohol 12EO ethoxylated (CAS # 24938-91-8)

2) Procedure

7) Stir POWSIL-59100 content to make it homogeneous;

8) Charge POWSIL-59100 and TDE-6 or AEO-6, TDE-12 & butylcarbitol into a mixer, and then stir the contents at moderate speed for about 10 min till fully homogeneous;

9) Premix acetic acid and water;

10) Slowly add the acidic water while continuously stirring the above content at moderate speed;

11) Clear micro-emulsion should be obtained at end of this procedure;

12) Filter above emulsion before packing, if necessary.

The Example of Application of 24.0% POWSIL-59100 Microemulsion:

24.0% of POWSIL-59100 can be used as received or pre-diluted with water before applying.

Optimum treatments are dependent on the required softness of the fabric and yarn after dyeing and finishing.

1. Pad-dry-cure process

Dosage:	10~20g/l for light fabric or 25-40g/l for heavy fabric
pH:	5.0 ~ 7.0
Temp. :	Ambient temperature
Dry/Cure:	120 ~ 170 ºC for 1~3 min

2. Exhaustion process

Dosage:	1.0 ~ 3.0% on the weight of fabric
Liquor ratio:	1/10 ~ 1/20
pH:	5.0 ~ 7.0
Temp. :	Ambient temperature
Time:	10 ~ 30 min
Drying:	100 ~ 130 ºC for 3~5 min

3. Garment washing process

Dosage:	1.0~3.0% on the weight of garment
Temp. :	Ambient temperature
Time:	10 ~ 30 min
Drying:	100 ~ 130 ºC for 3~5 min

Packing and Storage

To ensure that the product quality is maintained, the container should be tightly sealed when not in use. It should be stored at normal room temperature, preventing prolonged exposure to extreme heat and cold conditions, which may cause product separation. POWSIL-59100 tends to be sediment on bottom during storage period. If the product is separated, stir the contents to homogeneous. If the product is frozen, thaw it at warm condition and stir after thawed.

Notes

All information in the leaflet is based on our present knowledge and experience. We reserve the right to make any changes according to technological progress or further developments. Performance of the product described herein should be verified by testing.

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Please send all technical questions concerning quality and product safety to: support@SiSiB.com.

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