



Speciality Chemical and Auxiliaries

MINEX WOR

Wetting agent for using with fluorine type water and oil repellent agent

MINEX WOR is wetting agent which can be used on polyester, polyamide, wool and artificial leather with FC. Especially, it shows good wetting performance when it is used on polyolefin fabrics (ex. Polypropylene nonwoven) which are strongly hydrophobic.

GENERAL PROPERTIES

Appearance : Transparent colorless liquid
Ionic activity : Nonionic
pH : Neutral
Solubility : Low solubility in water

CHARACTERISTICS

1. When it is finished with FC on strongly hydrophobic fabrics, it shows good wetting performance.
2. It almost does not decrease water and oil repellency performance when use with in combination with fluorine type water and oil repellent agents. It shows more excellent performance than conventional nonionic surfactants.
3. It is low odor, low volatility and low foaming.
4. It prevents to have uneven water repellent finish on fabrics.

APPLICATION

1. Standard dosage

It needs pre-test to determine the dosage because depending on application technique or fabrics, the dosage will be changed. Typical dosage of MINEX WOR is 3 ~ 5 g/L. In case of finishing on polypropylene nonwoven, typical dosage is 4 g/L.

2. Bath preparation

MINEX WOR is low solubility in water. Therefore, it (= as product) is added into treating bath after adding FC, antistatic agent and other chemicals.

For example (In case of 100L solution)

Prepare water 20L → Stirring → Add FC agent → Stirring →

Add antistatic agents → Stirring → Add MINEX WOR → Stirring →

Add remaining water and stir

(Caution for handling :)

1. When it is used with other chemicals, it is necessary to test compatibility before use.

2. Avoid direct mix with other chemicals to be used with.
3. This product is hydrophobic and shows low solubility in water.
4. When open the package's cap, please put on protective equipment to avoid contact with splash caused by internal pressure.
5. After use, Keep container tightly sealed and store in 5-35°C and prevent exposure to sunlight.
6. Please stir the prepared solution slowly.
7. Refer to Material Safety Data Sheet before use.

TEST 1 : Performance of finishing on polypropylene non woven

Tested fabric :	Polypropylene non woven (SMMS)
Fiber density :	56 g/m ²
Treating conditions	
Pad :	1 dip 1 nip
Dry & Cure :	130 degree C for 90 seconds
Evaluation method	
Alcohol repellency :	WSP 80.8 (IPA/water, Rate ; 1 ~ 10)
Oil repellency :	AATCC-118 (Rate ; 1 ~ 8)
Hydrostatic head (HSH) :	JIS L 1092-98.6.1 (Pressure rising speed ; 60 cmH ₂ O/min)
Surface electrical resistance (SER) :	WSP 40.1 (Measured voltage ; 100V)

Results 1 : Comparing with other wetting agents

Table1 (Concentration : g/L)

AG-7600	30	30	30	30	30		Untreated
AG-E082						30	
DELECTOL LM-3*1	10	10	10	10	10	10	
MINEX WOR		4				4	
Hexanol			6				
Isopropanol				30			
Conventional one*2					3		
Pick up (%)	63	140	135	86	138	131	ND
Alcohol	4	10	9	4	9	10	4
Oil	0	6	1-2	0	5-6	6	0
HSH (mm)	595	580	410	605	310	570	620
SER (Ω)	9.9 X 10 ¹⁴	2.9 X 10 ⁹	1.5 X 10 ⁹	>9.9 X 10 ¹⁵	4.5 X 10 ⁹	4.6 X 10 ⁹	>9.9 X 10 ¹⁵
Odor*3	ND	5	2	3	5	5	ND

*1 Our antistatic agent

*2 Our conventional nonionic surfactant type wetting agent

*3 Odor

30g wetting agents which are listed on table 1 are added into 100mL glass beaker. Then they are evaluated by human nose as follows.

Rate	Standards of odor evaluated
1	Very strong
2	Strong (as strong as Hexanol)
3	Slightly weak
4	Quite weak
5	Hardly any odor

TEST 2 : Concentration and performance of MINEX WOR

Tested fabric :	Polypropylene non woven (SMS)
Fiber density :	45 g/m ²
Treating conditions	
Pad :	1 dip 1 nip
Dry & Cure :	130 degree C for 90 seconds
Evaluation method	
Alcohol repellency :	WSP 80.8 (IPA/water, Rate ; 1 ~ 10)
Oil repellency :	AATCC-118 (Rate ; 1 ~ 8)
Hydrostatic head (HSH) :	JIS L 1092-98.6.1 (Pressure rising speed ; 60 cmH ₂ O/min)

Table2 (Concentration : g/L)

AG-7600	30	30	30	30	30
DELECTOL LM-3	10	10	10	10	10
MINEX WOR	2	3	4	5	6
Pick up (%)	131	150	150	156	156
Alcohol	6-7	7-8	8	8	8
Oil	4	6	6	6	6
HSH (mm)	480	480	475	470	430

*Untreated fabric shows 510mm hydrostatic head.

Table3 (Concentration : g/L)

AG-E082	30	30	30	30	30
DELECTOL LM-3	10	10	10	10	10
MINEX WOR	2	3	4	5	6
Pick up (%)	125	144	150	150	150
Alcohol	6-7	8	8	8	8
Oil	2	5-6	6	6	6
HSH (mm)	485	480	475	465	410

TEST 3 : Finishing on 100% wool

Tested fabric : 100% Wool (Dyed)

Treating conditions

Pad : 1 dip 1 nip
 Dry : 110 degree C for 120 seconds
 Cure : 160 degree C for 120 seconds

Evaluation method

Water repellency : JIS L 1092-98 6.2 (Spray)
 Alcohol repellency : IPA/water (Rate ; 1 ~ 12, based on Du Pont method)
 Oil repellency : AATCC-118

Table 4 (Concentration : g/L)

AG-E092	50	50	50	50
MINEX WOR		4		
Iso-propanol			30	
Conventional type*1				3
Pick up (%)	24	68	27	74
Spray	80	100-	80	90+
Alcohol	5	8	5	8
Oil	0	5	3	4

*1 Our conventional nonionic wetting agent

Table 5 (Concentration : g/L)

AG-E092	50	50	50	50	50	50	50
MINEX WOR	0	1	2	3	4	5	6
Pick up (%)	24	48	56	68	68	69	69
Spray	80	90-	90+	100-	100-	100-	100-
Alcohol	4-5	6	7	8	8	8	7-8
Oil	0	2	4	5	5	4-5	4

TEST 4 : Finishing on artificial leather

Tested fabric : Polyurethane impregnate type nonwoven used with PET microfiber (Dyed)

Treating conditions

Dry : 100 degree C for 180 seconds
 Cure : 110 degree C for 180 seconds

Evaluation method

Water repellency : JIS L 1092-98 6.2 (Spray)
 Alcohol repellency : IPA/water (Rate ; 1 ~ 12, based on Du Pont method)
 Oil repellency : AATCC-118

Table 6 : Padding = 1dip 1nip

(Concentration : g/L)

AG-7600	25	50	25	25	25
MINEX WOR	-	-	3	-	-
Iso-propanol	-	-	-	30	-
Conventional type*1	-	-	-	-	3
Pick up (%)	3	4	58	5	55
Spray	80-	80+	100	80	80
Alcohol	5	9	10	5	5
Oil	0	4	6	3	3

*1 Our conventional nonionic wetting agent

Table 7 : Padding = 2dip 2nip

(Concentration : g/L)

AG-7600	25
MINEX WOR	-
Iso-propanol	30
Conventional type*1	-
Pick up (%)	48
Spray	90+
Alcohol	10
Oil	6

FOR YOUR PRODUCTION

Above suggestions described concerning uses and data in this bulletin are based on our laboratory tests, therefore users should make their own tests to determine the suitability of these products for their own particular purpose.

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MEISEI CHEMICAL WORKS, LTD.

Head Office: 1.Nakazawacho, Nishikyogoku, Ukyoku, KYOTO, JAPAN

& Tel: 075-312-8105 Fax:075-314-1150

Factory <http://www/meisei-chem.co.jp/>

Branches: TOKYO, NAGOYA, HAMAMATU, FUKUI, TSU factory