

2026 DOXA

CHEMISTRY ENVISIONED

Ver. 1

Dispersant / Leveling Agent

Adhesion Promoter / Defoamer

Rheology Additive / Functional Additive



Innovative Solutions

At DOXA we offer the market a brand new look at the next generation of additive technology.

The ever-increasing demand in our industry for performance and green-based products calls for innovative solutions - and we aim to provide nothing less.

Moreover, our extensive experience and solid foundation in pigment synthesis helps us to respond to changes and create more effective and targeted innovative additives.

Technical Support

Providing a solution with the right answers at the right time is our commitment to you.

Our global distribution partners are also committed to supporting you locally wherever you are.

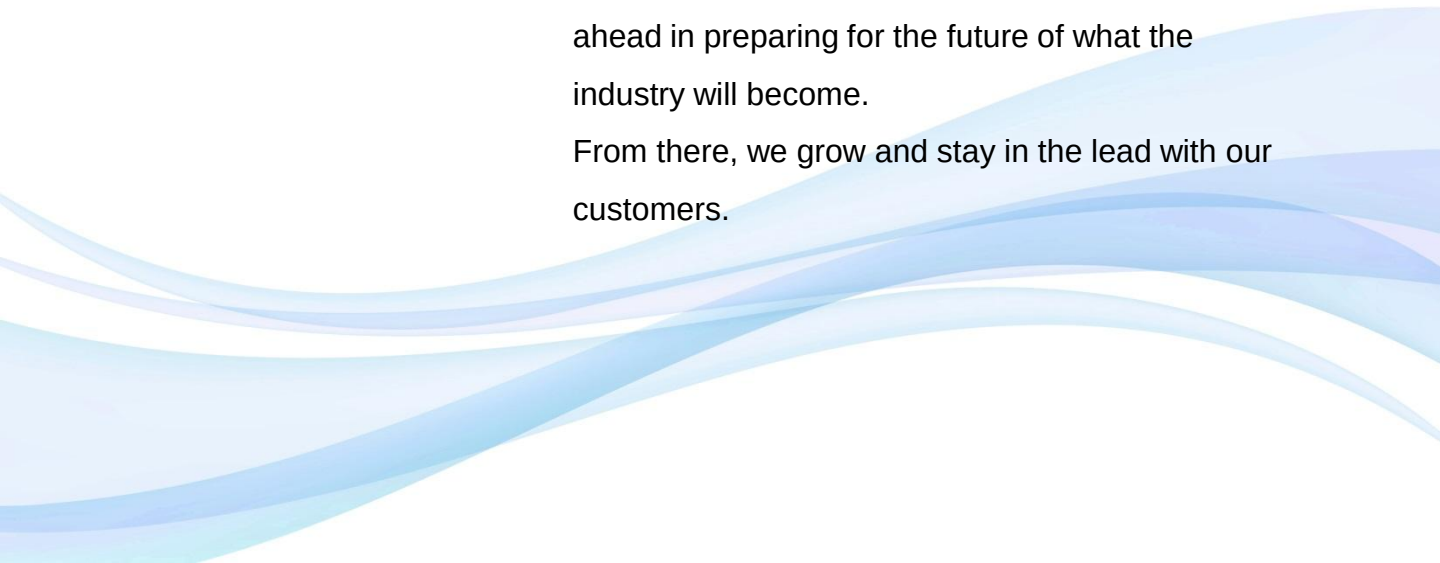
Our goal is to leave you with a sense of security whenever you encounter a technical need.

Understanding of Industry

50 years of experience in the industry puts us in a position to truly understand the dynamic needs of our customers.

We are not only focused on providing products and services for the industry today, we also look ahead in preparing for the future of what the industry will become.

From there, we grow and stay in the lead with our customers.



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DOXA[®]
CHEMISTRY ENVISIONED

SPREDOX[®]

Dispersant

Spreadox dispersants are polymeric dispersing agents developed to disperse and stabilize pigments in coating, ink and plastics. It greatly enhance the properties and performance of the finished products

Benifits include:

- Reduction of viscosity
 - Color strength enhancement, Gloss increase
 - Longer storage stability
 - Increase pigment/ filler loading and grinding efficiency
- Increasing Productivity

Dosage

Pigment	Dosage
Organic pigments	15-20 %
Inorganic pigments	10-15 %
TiO2/Fillers	1-2 %
Carbon black	25-40 %
High surface carbon black	40-80 %

Based on extensive testing, there is an ideal dosage level for dispersing agent in a formulation.

This can also be expressed as % dispersing agent of the weight of pigment.

$$\% \text{ DAOWP} = \frac{\text{BET surface area (m2/g)}}{5}$$

Usage Instructions

- Dissolve the dispersants in the solvent
- Add synergist if it is required
- Add pigments in grinding stages
- Add rest of resin solution

Instructions / Guidelines

Spreadox dispersant has good color powder affinity and media compatibility, which greatly reduces the intermolecular attraction and makes the viscosity lower. In this case, the pigment loading can be increased to enhance the viscosity of the base material, and to achieve suitable viscosity for grinding. However, too much resin is not conducive to the adsorption of dispersant on the pigment surface. Therefore, to sum up, the formulation with **Spreadox** dispersant should be designed towards high color powder and low resin content.

Synergists

Organic pigments, especially high performance pigments, are often difficult to be perfectly dispersed and ground in dispersion systems. In this case, Spreadox synergist and dispersant can be used together to achieve the best viscosity reduction and stability.

Our synergist range include:

Spreadox D-920

For organic red and yellow pigments in solvent based systems.

Spreadox D-950

For organic blue/green and carbon black pigments in solvent based systems.

Spreadox D-953

For organic blue/green and carbon black pigments in water and alcohol based systems.

The recommended ratios of (Dispersing Agent :

Synergist) are:

2:1	High surface Area Carbon Black
4:1	Carbon Black
4:1	Organic Blue
4:1	Organic Green
9:1	Organic Red and Yellow

COATING

Application

Solvent Based Coating (Polyester / Acrylic / PU / Alkyd Resins)

High surface area Carbon black

D-445BS	Excellent Jetness, suitable for 1KPU + CAB
D-446BS	Excellent Jetness, suitable for 2K PU

Carbon and organic pigments

D-159	Excellent dispersing effect, suitable for polyester
D-333	Excellent jetness, suitable for polyester
D-170	Organic/inorganic pigment co-grinding, suitable for polyester
D-415	Excellent dispersing effect and good anti-floating effect
D-163G	Good dispersing effect and excellent anti-floating effect
D-128	Good dispersing effect
D-108	Economical, suitable for NC / alkyd

Tio2 and inorganic pigments

D-148G	Excellent dispersing effect and weather resistance
D-141S	Excellent dispersing effect

Matting agents

D-401	Excellent dispersing effect
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Transparent iron oxide pigments

D-180	Excellent dispersing and transparent effect
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Anti-floating agents

D-147	For post-add stage
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UV Curing Coating

Matting agents

D-409A	Excellent dispersing effect
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Flooring Coating(Epoxy)

Epoxy color paste

D-163G	Good dispersing effect and excellent anti-floating effect
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Epoxy filler

D-148G	For dispersing barium Sulfate
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Anti-floating agent

D-147	For post-add stage
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Leather Color Paste(PU + DMF Solvent)

Carbon and organic pigments

D-151	Excellent dispersing effect
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Tio2 / inorganic pigments

D-140G	Excellent dispersing effect
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Water Based Coating (Resin Free Grinding)

Carbon and organic pigments

D-382	For Carbon black and organic pigment
D-260	For Phthalocyanine pigment

Tio2 and inorganic pigments

D-292	For organic and inorganic pigment
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Synergist

Black / Blue / Green

D-950	For solvent based systems
D-953	For water based systems

Red / Yellow

D-920	For solvent based systems
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Product Specification

Spredox	Composition	Active Content	Solvent	Acid Value	Amine Value
D-108	Polyester with amine	100%	-	>1	30-50
D-128	Polyester with amine	100%	-	30.5	26
D-180	Polyether with acidic/amine	100%	-	119	39
D-140G	Polyether with acidic	100%	-	45	-
D-141S	Polyether with acidic	52%	BAC	25	-
D-147	Polyether with acidic	52%	PMA/XY	20.5	-
D-148G	Polyester with acidic	52%	PMA/SOL100	45.5	-
D-151	Polyester with amine	100%	-	38.5	<15
D-159	Polyester with amine	40%	BAC	40	12.75
D-163G	Polyurethane with amine	45%	PMA/XY	-	10
D-170	Polyurethane with acidic/amine	30%	PMA	11	10
D-260	Polyether	100%	-	-	-
D-292	Acrylic with acidic	40%	water	6	-
D-333	Polyester with amine	100%	-	32	32
D-382	Acrylic with amine	100%	-	6	20
D-401	Polyether with acidic/amine	52%	BAC	12.5	4
D-409A	Acrylic with amine	45%	PMA/BCS/DMF	-	78
D-415	Polyurethane with amine	52%	PMA	-	38
D-445BS	Polyether with amine	50%	BCS	10	14.5
D-446BS	Polyether with amine	50%	BCS	7.5	15

INK

Application

Gravure Ink

Alcohol ester soluble PU reverse ink

D-324	Powders, excellent dispersing effect
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D-324G	D-324 improved
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D-375	Not crystallized
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D-375G	D-375 improved
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D-412	Dispersing TiO ₂
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Benzene soluble PA surface ink

D-153	Grinding with NC
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Alcohol soluble PA, PU, PVB surface ink

D-120	Grinding with NC
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Alcohol ester soluble acrylic surface ink

D-120	Grinding with PVC or NC
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Benzene soluble CLPP ink

D-151	Grinding with vinyl(MP45)+EVA
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D-153	D-151 improved
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D-117	Grinding with EVA
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Flexo Ink

Water based acrylic ink

D-276	Grinding with acrylic(Joncryl678)
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Alcohol soluble NC ink

D-120	Grinding with NC or PA
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UV curing flexo ink

D-382	Excellent viscosity reduction and storage stability
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D-140	Dispersing TiO ₂
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Offset Ink

Solvent free offset ink

D-117	Excellent color developing and oil/water Balance
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UV curing offset ink

D-324	Powders, excellent color developing and oil/water balance
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D-327N	Powders, excellent color developing and oil/water balance. Liquid, easy to dissolve
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D-412	Dispersing TiO ₂ and oil/water balance
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Inkjet

Eco solvent inkjet

D-390	Dispersing Red 146 with vinyl(E18/38), water resistance
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Dispersing Blue 15:4, water resistance
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Dispersing carbon black, water resistance

UV curing inkjet

D-470	Commonly used in all colors, especially dispersing Yellow 150
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D-382	Dispersing Red 122
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Synergist

Black / Blue / Green

D-950	For solvent based systems
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D-953	For water based systems
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Red / Yellow

D-920	For solvent based systems
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Product Specification

Spredox	Composition	Active Content	Solvent	Acid Value	Amine Value
D-117	Polyester with amine	100%	-	21.5	<3
D-120	Polyether with amine	100%	-	<1	32
D-140	Polyether with acidic	100%	-	48	-
D-151	Polyester with amine	100%	-	38.5	<15
D-153	Polyester with amine	100%	-	40	30
D-276	Acrylic with amine	35%	water	3	3
D-324	Polyester with amine	100%	-	25.5	35.5
D-324G	Polyester with amine	100%	-	28	28
D-327N	Polyester with amine	100%	-	27.5	25.5
D-375	Polyester with amine	50%	EAC	12.5	7.5
D-375G	Polyester with amine	50%	BCS	13.5	12.5
D-382	Acrylic with amine	100%	-	6	20
D-390	Polyester with amine	100%	-	-	20
D-412	Polyester with acidic	100%	-	142	-
D-470	Acrylic with amine	100%	-	-	-

PLASTIC & COMPOSITE Application

PVC / DOP Paste

D-500	Good dispersing effect for organic / inorganic pigments
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Masterbatch

D-501	Powders, enhance grinding efficiency, could replace PE wax
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PU Foam Color Paste

<i>Carbon Black / Organic Pigments</i>	
D-576-2	Improve flow property
D-575	Economical

Unsaturated Polyester (Gel Coat)

<i>Carbon Black / Organic Pigments</i>	
D-576-2	Excellent dispersing effect
D-163G	Good dispersing effect, anti-floating
<i>Tio2 / Inorganic pigments</i>	
D-564	Excellent dispersing effect

Unsaturated Polyester (BMC / SMC)

D-564	Dispersing Al(OH)3 and CaCo3
D-565	Economical



Product Specification

Spredox	Composition	Active Content	Solvent	Acid Value	Amine Value
D-163G	Polyurethane with amine	45%	PMA/XY	-	10
D-500	Polyester with amine	100%	-	12.5	11.5
D-503	Polyester with amine	100%	-	2.5	2.3
D-564	Polyester with acidic	100%	-	112	
D-565	Polyether with acidic	100%	-	250	-
D-575	Polyether with amine	100%	-	-	7.5
D-576-2	Polyether with amine	100%	-	16.5	27

DOXFLOW[®]

Leveling agent

Doxflow is a brand of leveling agent developed by DOXA. Based on silicon, fluorine, and acrylic technology, Doxflow provides an excellent solution to leveling problems

ORGANIC SILICONE TYPE

Product Specification

Doxflow	Composition	Solid content	Leveling	Recoatibility	S/B	W/B	UV	Feature
8306	Polyether modified silicone	12.5%	+++		V		V	Excellent leveling effect
8307	Polyether modified silicone	100%	+++ ₋		V		V	100% solid of 8306
8333G	Polyether modified silicone	100%	++	+	V		V	Good leveling effect and gloss
8730	Polyether modified silicone	50%	+	++	V		V	Does not affect recoating
6350	Silicone acrylate	100%	++	+			V	Reactive type, good leveling effect, gloss and durability
6352	Silicone acrylate	100%	++++	-			V	Reactive type, excellent leveling effect and durability
8346	Polyether modified silicone	52%	++	+		V		Substrate wetting
8410	Polyether modified silicone	100%	++	+	V	V	V	Twin structure, combining leveling, defoaming and substrate wetting

NON-ORGANIC SILICONE TYPE

Product Specification

Doxflow	Composition	Solid content	Solvent	S/B	Feature
3358	Copolymer of Acrylic	52%	Petroleum solvent	V	Does not affect the gloss of coating film, good leveling effect and recoatability
3990	Copolymer of Acrylic	100%	-	V	Does not affect the gloss of coating film, good leveling effect and recoatability

V
Recommended

+++
Excellent

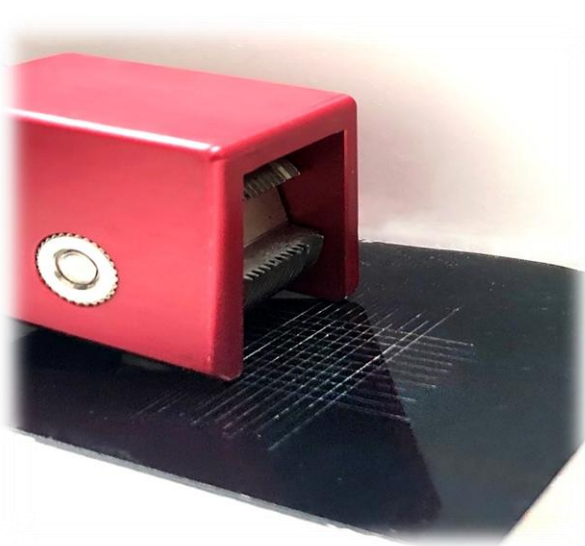
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Great

+
Good

ADDOX®

Adhesion promoter

Addox is a line of adhesion promoters which provide a great solution to adhesion problems.



The range of Addox products includes specialty polyester resins for use as adhesion-enhancing components in water-based, solvent-based, or UV-cured coatings and printing inks.

Addox products are broadly compatible with a large number of resins and improve adhesion to a wide variety of substrates. They are effective on metals, glass and various plastics, and are therefore often used in base coats.

Addox also helps to improve the flexibility and corrosion resistance of coating systems.

Product Specification

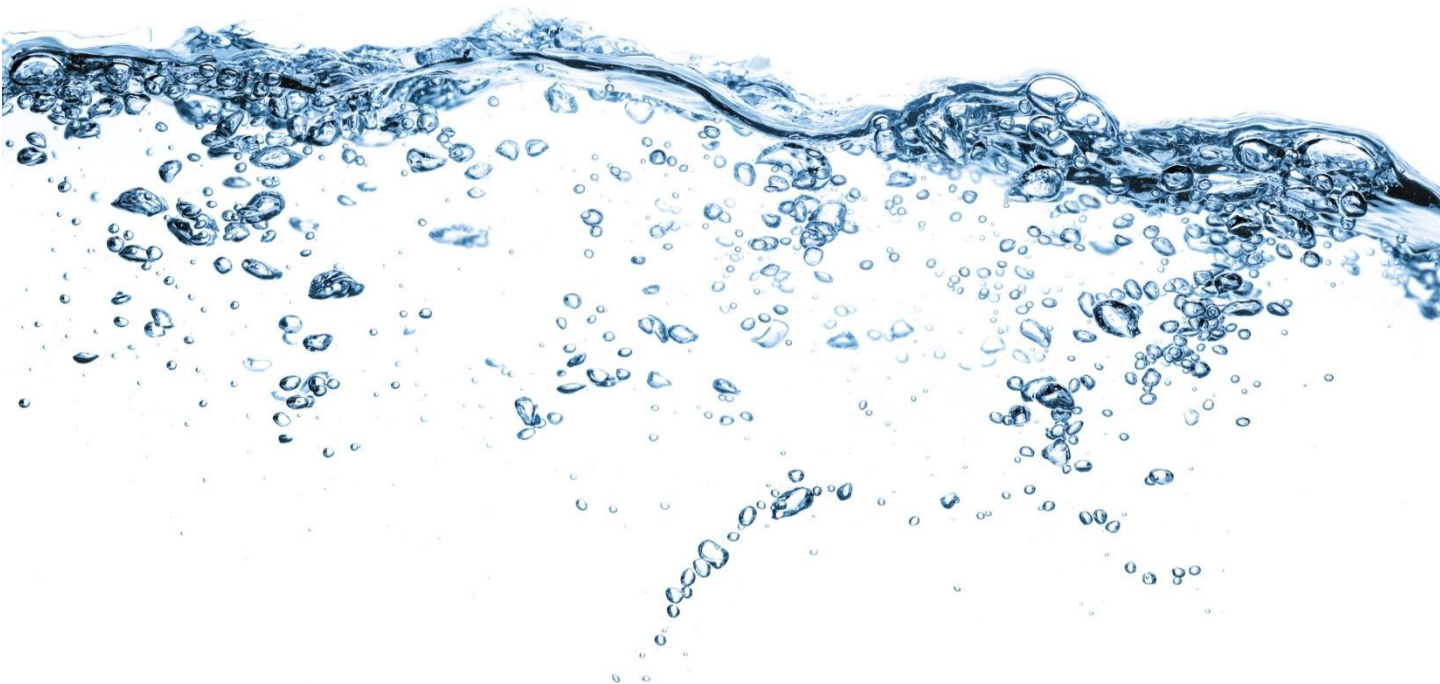
Addox	Composition	Solid content	Solvent	Adhesion	Gloss & Stability	S/B	UV	Feature
A30	Carboxylic acid polyester	70%	IPA	+++	++	V		Works well with metal and glass substrates.
A40	Phosphoryl ester acrylate	100%	-	+++	+		V	Suitable for UV ink, improve the adhesion on metal and glass substrate.

V Recommended

DOXFOAM®

Defoamer

Doxfoam is a silicone-free/silicone anti-foaming and bubble releasing agent for solvent based and solvent free systems.



Product Specification

Doxfoam	Composition	Solid content	Solvent	S/B	W/B	UV	Feature
52	Copolymer of Acrylic	20%	Petroleum solvent/BAC/BCS	V		V	Silicone free , consist of both leveling and defoaming effect
65	Modified silicone oil	1%	MEK	V		V	Fast defoaming, suitable for solvent
68	Modified silicone oil	100%	-	V		V	Anti-foaming/releasing agent, suitable for high solid, build epoxy coating and screen ink
F24	Modified silicone / PPG	100%	-		V		Highly versatile and can be added at any stage
F81	Modified silicone	100%	-		V		Excellent anti-foaming effect, could be used at grinding stage
F82	Modified silicone emulsion	26%	water		V		Excellent anti-foaming effect, could be incorporated as a post add to formula

V Recommended

DOXGEL®

Rheology additive

Doxgel is an organic rheology additive that can prevent coatings from sagging.

Product Specification

Doxgel	Composition	Solid content	Solvent	S/B	W/B	Feature
RH11	Modified polyurethane	50%	Water/BCS		V	High thickening efficiency and strong thixotropy

V Recommended

CONDOX®

Functional additive

Product Specification

Condox	Composition	Solid content	Solvent	S/B	W/B	Feature
ATA-1	Modified amine	100%	-	V		High efficiency anti-static agent for food packaging inks

V Recommended





SOLVENT ABBREVIATION

BAC	Buty Acetate	IPA	Isopropyl Alcohol	IBA	Isobutyl Alcohol
EAC	Ethyl Acetate	XY	Xylene	BCS	Butyl Cellosolve
EPH	Ethylene Glycol Monophenyl Ether	MEK	Methyl Ethyl Ketone		







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