

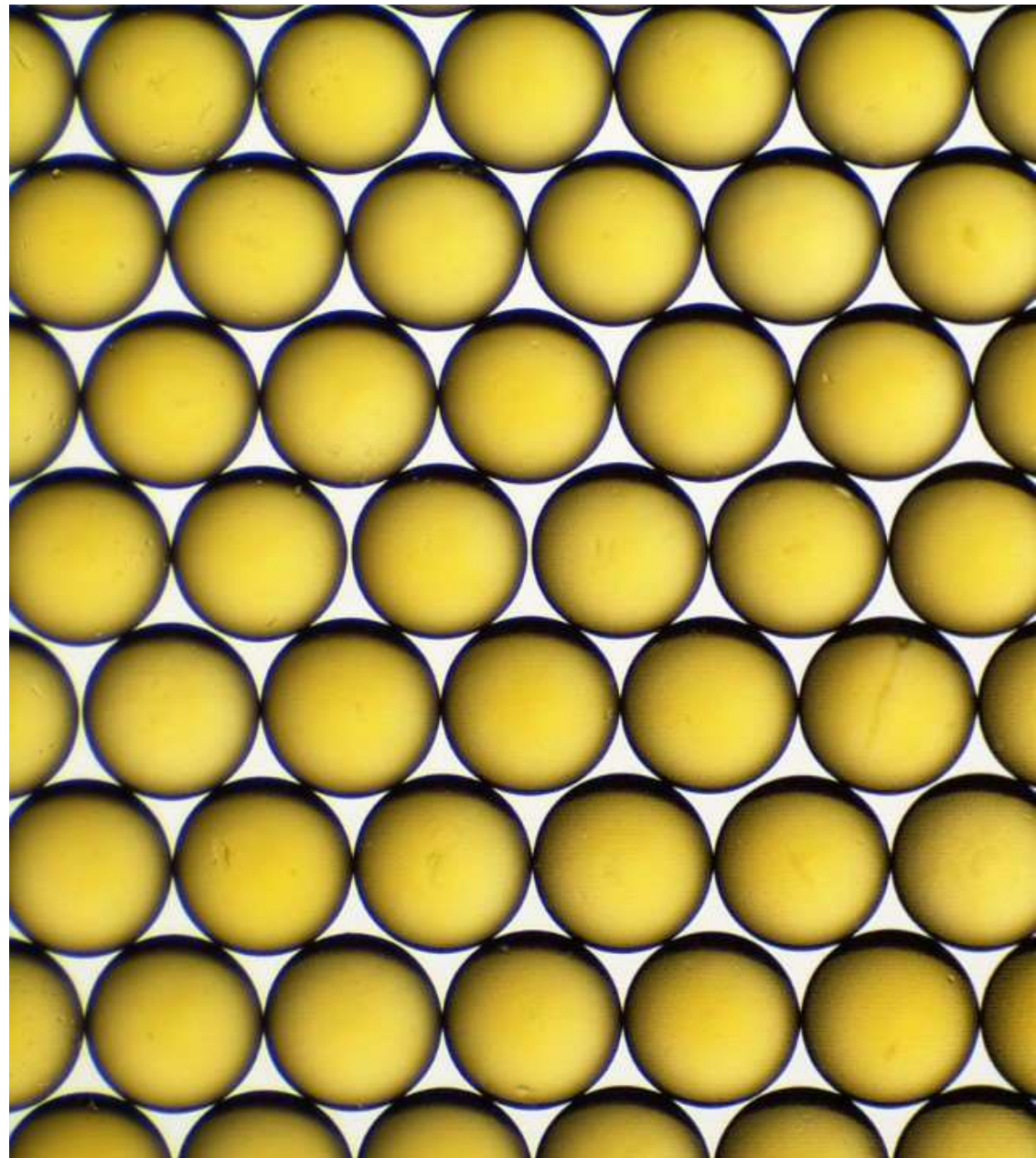
TRILITE®

超纯水

离子交换树脂

Premium grade

•samyang•



TRILITE®  
At a glance

三养是公认的离子交换树脂领导者，生产适用于各种应用的范围的离子交换树脂。  
三养是均一系树脂的领先制造商，拥有最先进的技术和亚洲最大的生产能力。

**1** First & Only



韩国唯一的  
离子交换树脂生产厂

**+2** Factories

韩国蔚山，群山工厂  
+海外OEM工厂

**+200** Products

电厂，超纯水，食品级，医药，  
催化等200种产品

**+400** Partners

与全球400家  
合作伙伴合作

**+50** Sales Networks

销往全球  
50个国家

**1.1** ↓ Uniformity  
Coefficient

均一系数 1.1 以下  
高品质均一系离子交换树脂

TRILITE®  
At a glance

• **samyang** • •  
Fine Technology

Production of  
**next generation**  
ion exchange resins

**Establishment**  
2015

**Main products**  
UPS ion exchange resin

**Organization of Shareholders**  
Samyang Corporation 50%  
Mitsubishi Chemical 50%

• **samyang** • •



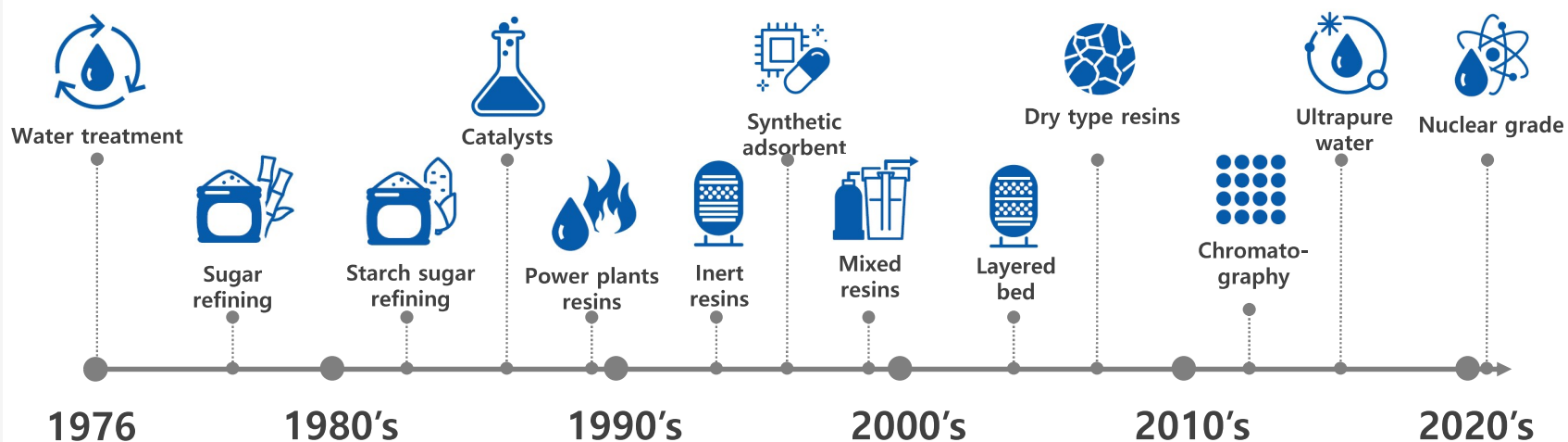


The passion  
for innovation

Footsteps of  
continuous  
growth

TRILITE® 是根据客户的应用需求而开发的。

三养始终如一地追求离子交换树脂的技术开发。离子交换树脂的用途随着产业的要求而改变，三养推出这时代最好的树脂。

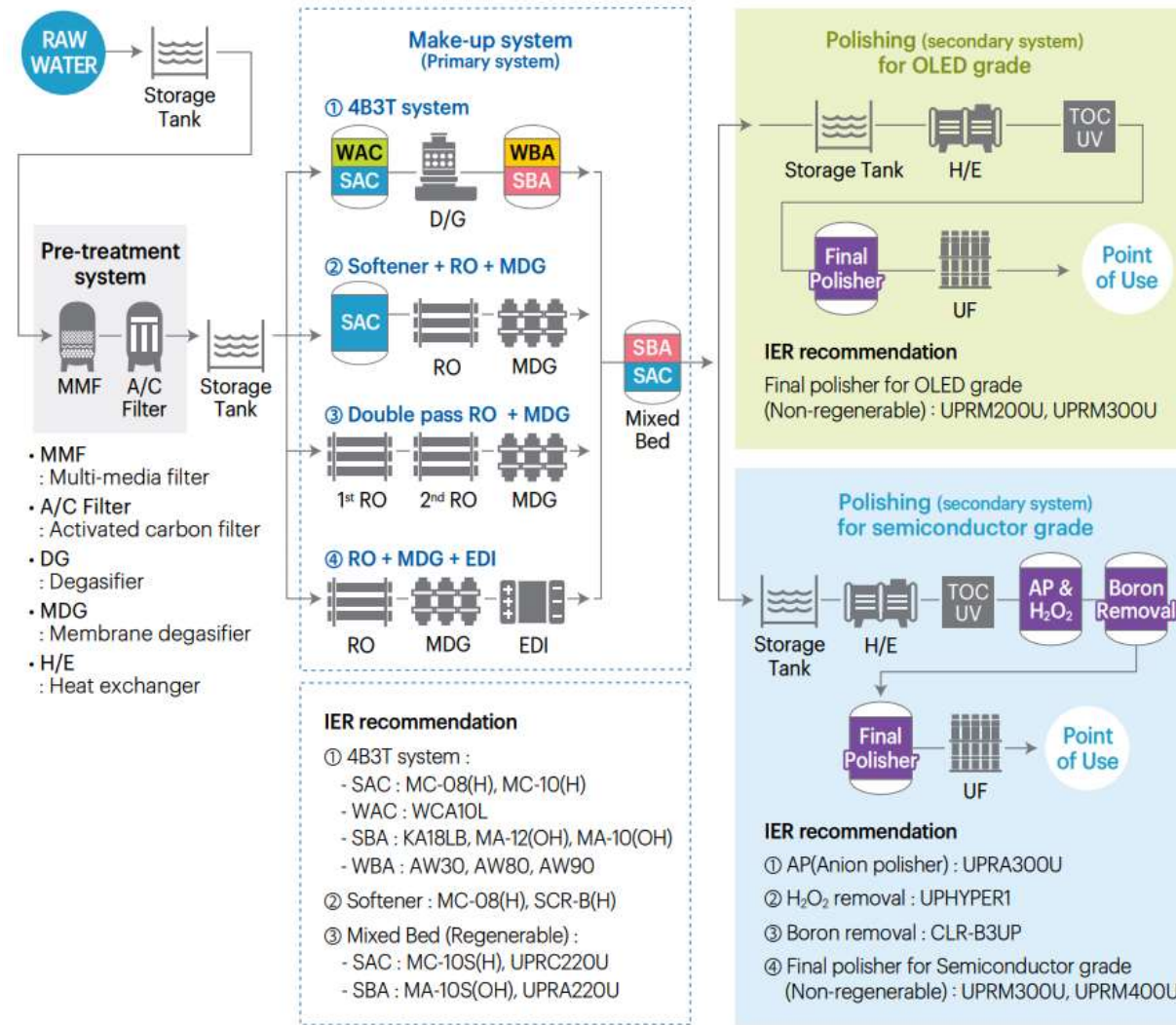


# 超纯水 Ultra pure water

## Application-wise UPW resins

- Make-up resins
- Mixed-bed resins
- Polisher resins
- Hydrogen peroxide removal resin
- UPW grade boron removal resin

## 一般的超纯水生产过程与产品选择 (Typical UPW process and resin selection guide)



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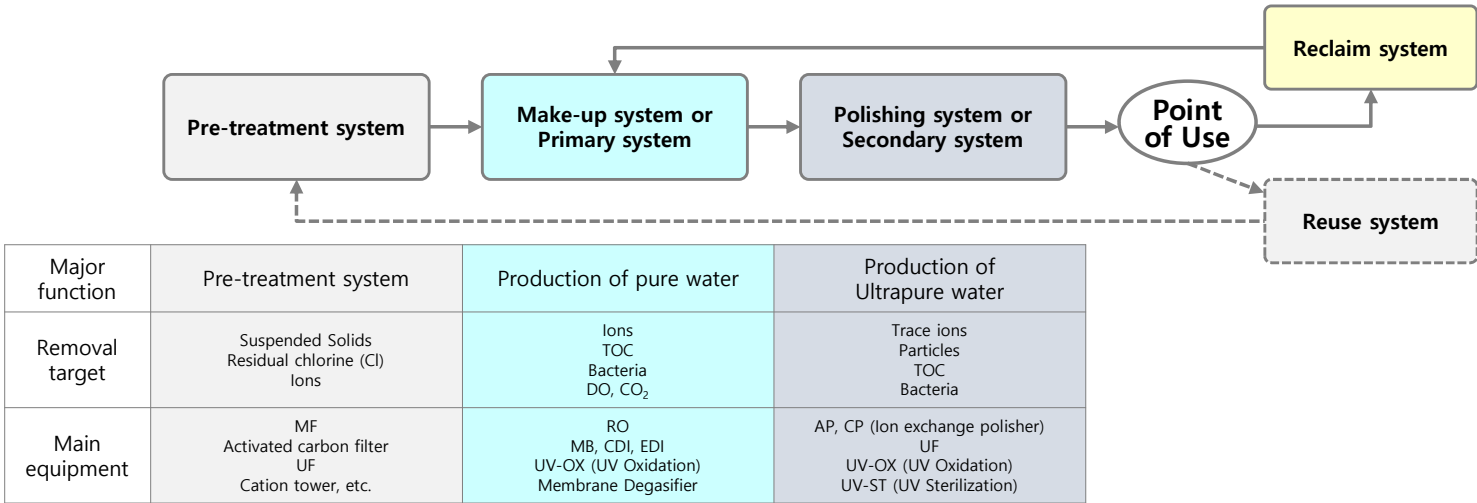
根据电子工业的发展对超纯水的纯度要求 (Required purity level of Ultrapure water)

随着显示器、半导体等电子电气行业的发展，“清洗”过程，即去除细微杂质的过程越来越精细，对超纯水的质量要求也越来越严格。

item	Unit	Make-Up System	Polishing System	
			LCD/OLED grade	Semiconductor grade
Resistivity	MΩ·cm	≥ 16.0	≥ 18.0	≥ 18.2
TOC	ppb	≤ 40	≤ 10	≤ 1
SiO <sub>2</sub>	ppb	≤ 5	≤ 5	≤ 0.05
DO	ppb	≤ 50	≤ 50	≤ 1
Particle	-	-	≤ 10 (pcs/ml, at ≥ 0.1μm)	≤ 200 (pcs/l, at ≥ 0.05μm)
Metal	ppt	-	-	≤ 0.1
Boron	ppt	-	-	≤ 1
H <sub>2</sub> O <sub>2</sub>	ppt	-	-	≤ 1

超纯水的生产过程 (Production process of Ultrapure water)

超纯水的生产过程一般分为前处理系统、纯水（初级）系统、超纯水生产系统（抛光或二级系统）和回收系统。



# 超纯水

## Ultra pure water

### Application-wise UPW resins

- **Make-up resins**
- **Mixed-bed resins**
- **Polisher resins**
- **Hydrogen peroxide removal resin**
- **UPW grade boron removal resin**

### TRILITE 超纯水离子交换树脂产品目录 (TRILITE Ultrapure water ion exchange resin product line)

决定超纯水最终品质的抛光混合树脂按照出水要求具有各种产品。各产品的出口水保证值和特点如下。

- ① 高流速下为实现高运行交换容量, 需要粒径非常均匀 (均一系数小于1.1) 的树脂
- ② 为了最少化离子的溶出, 需要非常高的H, OH转换率
- ③ 严格管理TOC(Total organic carbon)与微量的金属离子

TRILITE超纯水离子交换树脂供应给国内外各种超纯水设施, 已经具有从OLED, LCD (Samsung Display, LG Display) 到半导体 (Samsung Electronics, SK Hynix等) 可靠的案例, 并且通过稳定的质量控制和及时交货。为提高客户的竞争力做出贡献。

TRILITE 超纯水离子交换树脂按处理标准分类, 各具有如下特点。

Grade Series	牌号	阳离子转型率	阴离子转型率		出水条件	特点与用途
		H <sup>+</sup> (%)	OH <sup>-</sup> (%)	Cl <sup>-</sup> (%)		
UPR100 Series	UPRM100U	99.0 ↑	95.0 ↑	1.0 ↓	Guarantee) Resistivity > 17.0MΩ·cm Actual) Resistivity > 18.0MΩ·cm	高电阻率的超纯水 电子厂家纯水系统和抛光
UPR200 Series	UPRM200U	99.9 ↑	95.0 ↑	1.0 ↓	Resistivity > 18.1MΩ·cm(in 30 min) △TOC < 5 ppb (in 120min)	非常高的电阻率, 低TOC的超纯水 LCD/OLED厂家纯水系统和抛光
UPR300 Series	UPRM300U	99.9 ↑	97.0 ↑	0.1 ↓	Resistivity > 18.2MΩ·cm(in 30 min) △TOC < 1 ppb (in 180min)	非常高的电阻率, 非常低TOC的超纯水 LCD/OL ED, 半导体级别抛光
UPR400 Series	UPRM400U	99.9 ↑	97.0 ↑	0.1 ↓	Resistivity > 18.2MΩ·cm(in 30 min) △TOC < 1 ppb (in 180min) Metal impurity (ppm, as Dry Base) Na<1, Fe<1, Zn<0.5,Al<0.5, Cu<0.5	非常高的电阻率, 非常低的TOC, 非常低的Metal ion leakage 超纯水 半导体级别抛光

※ 进水

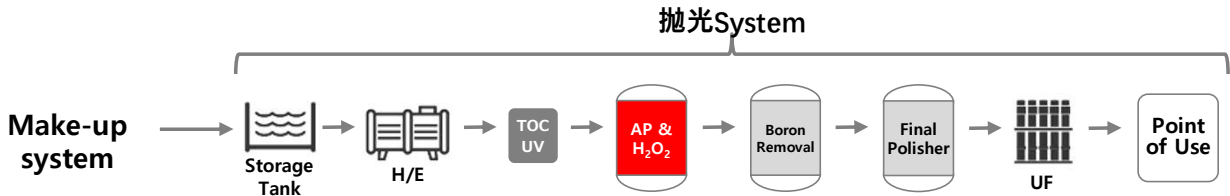
- UPR100 Series : 电导率 10μs/cm RO 出水, SV36
- UPR200, 300, 400 Series : 电阻率 >17.5MΩ.cm, TOC <2ppb, SV30

# 超纯水 Ultra pure water

## Application-wise UPW resins

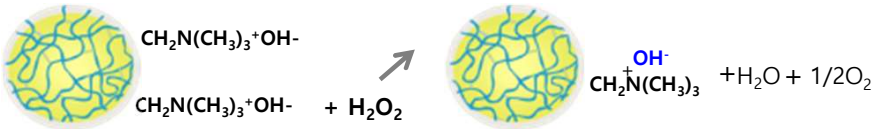
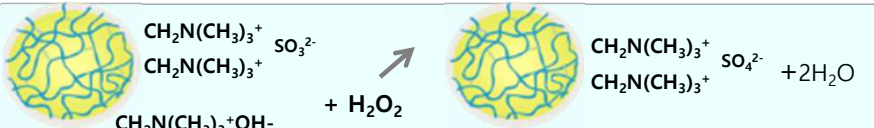

- Make-up resins
- Mixed-bed resins
- Polisher resins
- **Hydrogen peroxide removal resin**
- UPW grade boron removal resin

TRILITE 除双氧水离子交换树脂 (TRILITE Hydrogen Peroxide(H<sub>2</sub>O<sub>2</sub>) removal resin)



TOC-UV利用分子结合破坏力大的185nm的UV来分解处理水中的TOC成分。生成反应性较大的Hydroxyl radical，切断TOC成分的结合环，分解成H<sub>2</sub>O和CO<sub>2</sub>。生成的CO<sub>2</sub>可以被后端的AP(Anion polisher)去除，这里使用的离子交换树脂应选择TOC leakage非常低的(ΔTOC<1ppb)。TOC-UV产生的Hydroxyl radical跟H<sub>2</sub>O起反应，产生约30ppb以下的双氧水（过氧化氢，H<sub>2</sub>O<sub>2</sub>）。

生成的双氧水会劣化后端的AP，成为性能下降的原因，在工程上发生问题，并作为产生晶片缺陷的原因。应予以清除。除双氧水树脂TRILITE UPH01 可以去TOC UV处理生成的双氧水(H<sub>2</sub>O<sub>2</sub>)及阴离子，延长Polishing System的稳定性和寿命。TRILITE UPH01 为三星电子等现场超纯设备供货，证明了优秀的性能。

Anion Polishing Resin		Slow H <sub>2</sub> O <sub>2</sub> removal rate and generation of O <sub>2</sub> deteriorates life cycle (resin degradation and high TOC)	
UPH01		Fast H <sub>2</sub> O <sub>2</sub> removal rate and removes anions and CO <sub>2</sub>	
	Grade	Inlet Condition	Outlet condition
Hydrogen Peroxide removal (H <sub>2</sub> O <sub>2</sub> removal)	UPH01	Resistivity >18.2MΩ·cm TOC < 1 ppb	Resistivity > 18.2MΩ·cm (in 24 hours) ΔTOC < 1.2 ppb (in 24 hours) H <sub>2</sub> O <sub>2</sub> removal > 14~16g H <sub>2</sub> O <sub>2</sub> /ℓ-Resin Metal <1 ppt

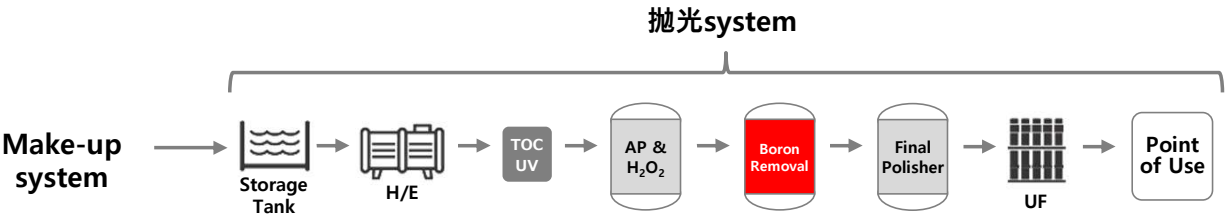


# 超纯水 Ultra pure water

## Application-wise UPW resins

- Make-up resins
- Mixed-bed resins
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- **UPW grade boron removal resin**

TRILITE 超纯水除硼离子交换树脂 (TRILITE UPW boron removal resin)


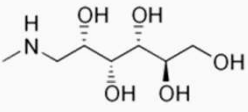


硼在水中不但显示非常弱的离子性，而且亲和力低，最快被溶出。降低Polishing System的稳定性和寿命。

硼在制造半导体时作为Dopant，但意外的硼流入会影响半导体性能。所以在半导体工程中，硼应严格控制在1ppt以下。

使用超纯水除硼离子交换树脂TRILITE CLR-B3UP可以实现稳定的操作。

超纯水除硼离子交换树脂TRILITE CLR-B3UP使用善于吸附硼的N-methylglucamine为官能团，并降低了TOC leakage。

	Grade	Functional group	Exchange capacity	Inlet Condition	Outlet condition
Boron Polisher	<b>CLR-B3UP</b>	N-methylglucamine 	TEC (eq/l) : 0.9 ↑ Boron exchange capacity (eq/l) : 0.4 ↑	Resistivity > 17.5MΩ·cm TOC < 2 ppb	△TOC < 5 ppb (in 48 hours)

# TRILITE 超纯水等级

## UPRM200U

用于显示器 (LCD / OLED) 最终抛光机

## TRILITE UPRM200U

非常高的电阻率，非常低的 TOC



Grade		URRC200U	UPRA200U
Matrix		UPS SAC GEL	UPS SBA GEL
		Standard crosslinkage	
Ionic form		H+	OH-
Total capacity (eq/L)		> 1.9	> 1.0
Moisture retenetion(%)		50 - 56	62 - 70
Average diagmeter(μm)		620± 50	620± 50
Uniformity coefficieint		< 1.1	
Ionic conversion rate	H+ (%)	> 99.9	
	OH- (%)	> 95.0	
	Cl- (%)	< 1.0	
		↓	↓
		Mixed ratio : 1:1 (capacity ratio)	
		↓	
Grade		UPRM200U	
Type		Mixed resin	
Feed water		Resistivity > 17.5 MΩ·cm, TOC <2ppb, SV30	
Outlet condition		Resistivity > 18.1 MΩ·cm (in 30min) △TOC < 5ppb (in 120min)	

### TRILITE UPRM200U的优势

- 均一系数小于1.1  
→ 即使在快速的服务流量下也具有出色的运行能力
- 优秀的转化率——减少离子泄漏  
→ 电阻率 18.1MΩ·cm (in 30 min), H+ 99.9%, OH- 95.0%
- 严格控制TOC（总有机碳）和微量金属离子  
→ △TOC < 5ppb (in 120 min)

For detailed information

- [Technical Data Sheet - UPRM200U](#)

For MSDS

- [Material safety date sheet - UPRM200U](#)

产品比较

UPRM200U

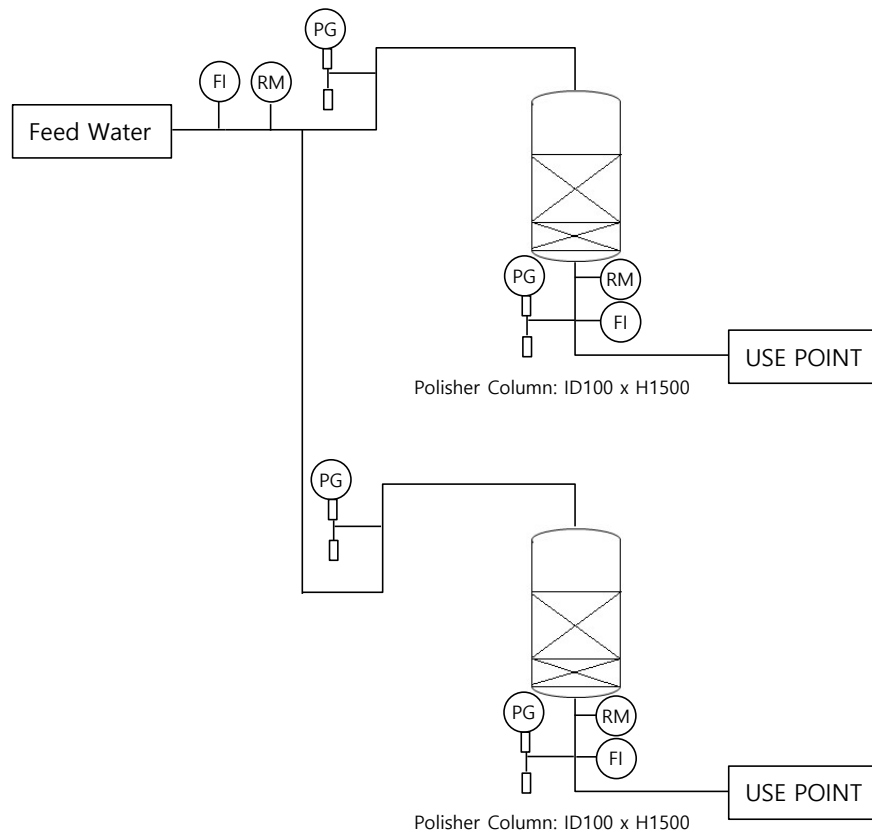
技术指标 Specification Comparison

Grade name		TRILITE UPRM200U		Dupont UP6150		Purolite UCW3700	
Type		Cation	Anion	Cation	Anion	Cation	Anion
Ionic Form		H <sup>+</sup>	OH <sup>-</sup>	H <sup>+</sup>	OH <sup>-</sup>	H <sup>+</sup>	OH <sup>-</sup>
Total Capacity (eq/ℓ)		1.9	1.0	1.8	1.0	1.9	1.0
Moisture Retention (%)		50~60	62~70	44~54	54~66	49~54	60~70
Uniformity Coefficient		1.1	1.1	1.2	1.25	1.2	1.2
Average Diameter (μm)		620±50	620±50	630±50	630±50	610±40	570±50
Ionic Conversion	H <sup>+</sup> (%)	99.0 ↑	-	99.0 ↑	-	99.9 ↑	-
	OH <sup>-</sup> (%)	-	95.0 ↑	-	95.0 ↑	-	95.0 ↑
	Cl <sup>-</sup> (%)	-	1.0 ↓	-	0.5 ↓	-	-
Remarks		• High total capacity • Lowest U.C. 1.1 ↓					

## 产品比较

### UPRM200U

#### 性能比较 Performance comparison Test set-up



※ 进水水质: 电阻率 > 17.5MΩ.cm, TOC < 2ppb, SV=30

※ Feed water quality : Resistivity > 17.5MΩ.cm, TOC < 2ppb, SV=30

#### Equipment

- Flow rate: 1.5m<sup>3</sup>/hr(SV=150)
- Resin Sample: 10ℓ/Unit
- Column type: Transparent PVC X2ea

#### Measuring-instrument

- Pressure gauge
- Flowmeter
- Resistivity Meter: Thornton M300
- TOC Analyzer: Anatel A1000
- Particle Counter: Anatel UP100

#### Electricity, Pipe

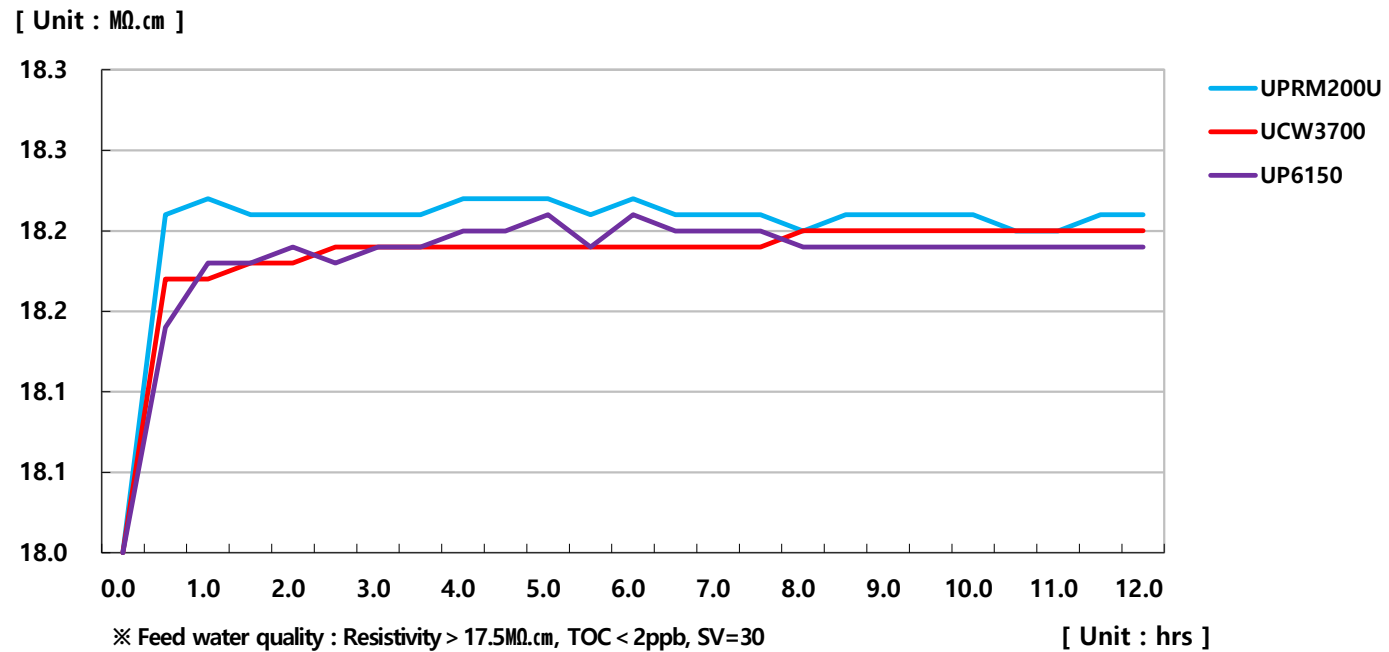
- Monitoring panel: CS/Paint
- Pipe type: C-PVC



## 产品比较

### UPRM200U

#### 性能比较(电阻率) Performance comparison (Resistivity)



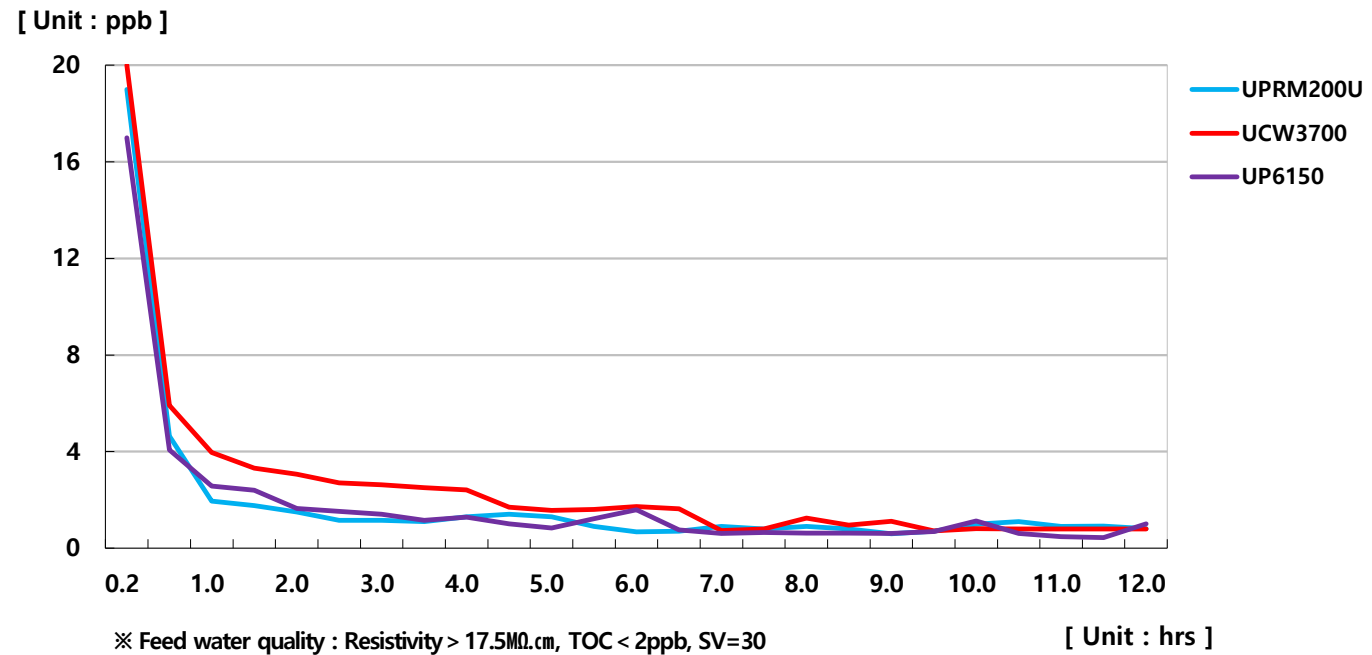
→ 与 UP6150、UCW3700 相比，UPRM200U 表现出卓越的性能。  
(较低的均一系数使离子交换反应均衡、均一)

→ UPRM200U shows outstanding performance comparing to UP6150, UCW3700.  
(Lower uniformity coefficient makes even and equalized ion exchange reactions)

## 产品比较

### UPRM200U

性能比较( $\Delta$ TOC) Performance comparison ( $\Delta$ TOC)



→ UPRM200U 表现出类似（针对 UP6150）甚至更好的性能（针对 UCW3700）

→ UPRM200U shows similar (against UP6150) or even better performance (against UCW3700)

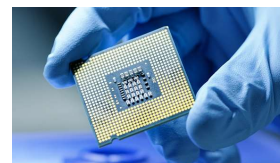
# TRILITE 超纯水等级

## UPRM300U UPRM400U

用于半导体的最终抛光机

## TRILITE UPRM300U/400U

非常高的电阻率，非常低的 TOC



Grade		URRC300U/400U	UPRA300U/400U
Matrix		UPS SAC GEL	UPS SBA GEL
		Standard crosslinkage	
Ionic form		H+	OH-
Total capacity (eq/L)		> 1.9	> 1.0
Moisture retenetion(%)		50 - 56	62 - 70
Average diagmeter(μm)		620± 50	620± 50
Uniformity coefficieint		< 1.1	
Ionic conversion rate	H+ (%)	> 99.9	
	OH- (%)	> 97.0	
	Cl- (%)	< 0.1	
		↓	↓
		Mixed ratio : 1:1 (capacity ratio)	
		↓	
Grade		UPRM300U/400U	
Type		Mixed resin	
Feed water		Resistivity > 17.5 MΩ·cm, TOC <2ppb, SV30	
Outlet condition		Resistivity > 18.2 MΩ·cm (in 30min)	
		ΔTOC < 1ppb (in 180min) (UPRM400U) Metal* <0.1ppt, Ion** <1ppt	

### TRILITE UPRM400U的优势

- 均一系数小于1.1  
→ 即使在快速的服务流量下也具有出色的运行能力
- 出色的树脂转化率，最大限度地减少离子泄漏  
→ 电阻率18.2MΩ·cm (in 30 min), H+ 99.9%, OH- 97.0%
- 严格控制TOC（总有机碳）和微量金属离子  
→ ΔTOC < 1ppb (in 180min)

\* Li, Na, Mg, Al, K, Ca, Cr, Mn, Fe, Co, Ni, Cu, Zn, Sr, Ba, Pb  
\*\* F, Cl, NO<sub>2</sub>, Br, NO<sub>3</sub>, SO<sub>4</sub>, PO<sub>4</sub>, NH<sub>4</sub>

TRILITE  
超纯水等级

UPRM300U  
UPRM400U

TRILITE 半导体等级最终抛光离子交换树脂 (TRILITE semiconductor grade final polisher ion exchange resin)

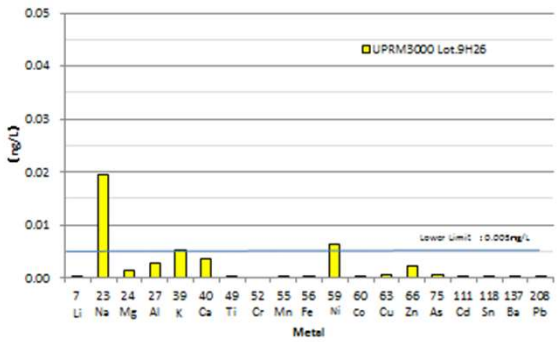
TRILITE UPRM400U 是一种优质等级，可最大限度地减少金属离子泄漏。 其特点如下。

最终抛光机出口水规格（韩国半导体公司“A”参考）

Item	Spec	UPRM300U	UPRM400U
Resistivity*	> 18.2 MΩ·cm	O (in 30min)	O (in 30min)
△TOC*	< 1 ppb	O (in 180min)	O (in 180min)
Particle (> 0.05μm)	< 200 pcs/ℓ	O	O
Boron	< 1 ppt	O	O
Metal**	< 0.1 ppt	△	O
Ion***	< 1 ppt	△	O

\* Feed water : Resistivity >17.5 MΩ·cm, TOC < 2ppb, SV30  
\*\* Li, Na, Mg, Al, K, Ca, Cr, Mn, Fe, Co, Ni, Cu, Zn, Sr, Ba, Pb  
\*\*\* F, Cl, NO<sub>2</sub>, Br, NO<sub>3</sub>, SO<sub>4</sub>, PO<sub>4</sub>, NH<sub>4</sub>

日本“B”公司金属离子泄漏分析报告



Li	Na	Mg	Al	K	Ca	Ti	Cr	Mn
<0.005	0.019	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005
Fe	Co	Ni	Cu	Zn	As	Cd	Ba	Pb
<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

韩国公司“A”金属离子泄漏分析报告

Sample	Day	Li	Na	Mg	Al	K	Ca	Cr	Mn	Fe	Co	Ni
IN	0일											
	3일차	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
OUT	0일											
	3일차	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Cu	Zn	Sr	Ba	Pb	F	Cl	NO <sub>2</sub>	Br	NO <sub>3</sub>	SO <sub>4</sub>	PO <sub>4</sub>	NH <sub>4</sub>
0.05	0.10	0.05	0.05	0.05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
0.05	0.10	0.05	0.05	0.05	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.7

Li	Na	Mg	Al	K	Ca	Cr	Mn
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fe	Co	Ni	Cu	Zn	Ba	Pb	Sr
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

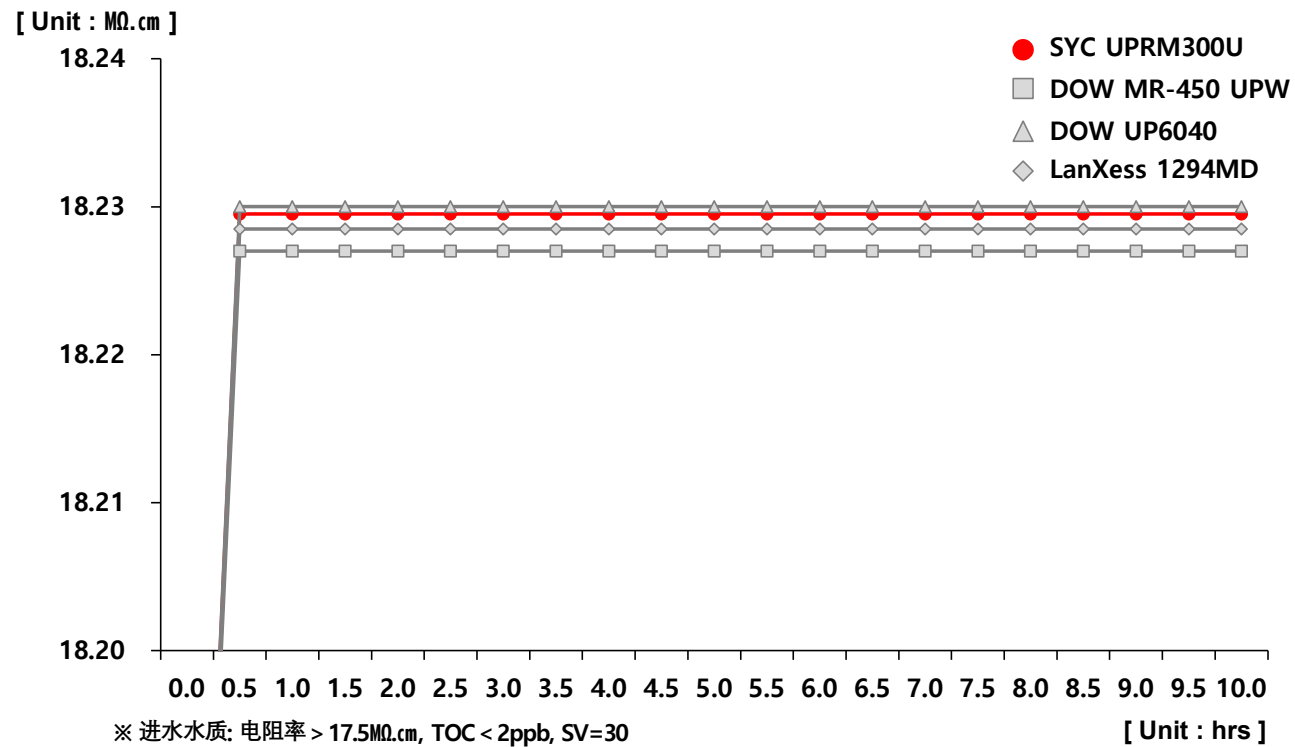
F	Cl	NO <sub>2</sub>	Br	NO <sub>3</sub>	SO <sub>4</sub>	PO <sub>4</sub>	NH <sub>4</sub>
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0



## 产品比较

### UPRM300U

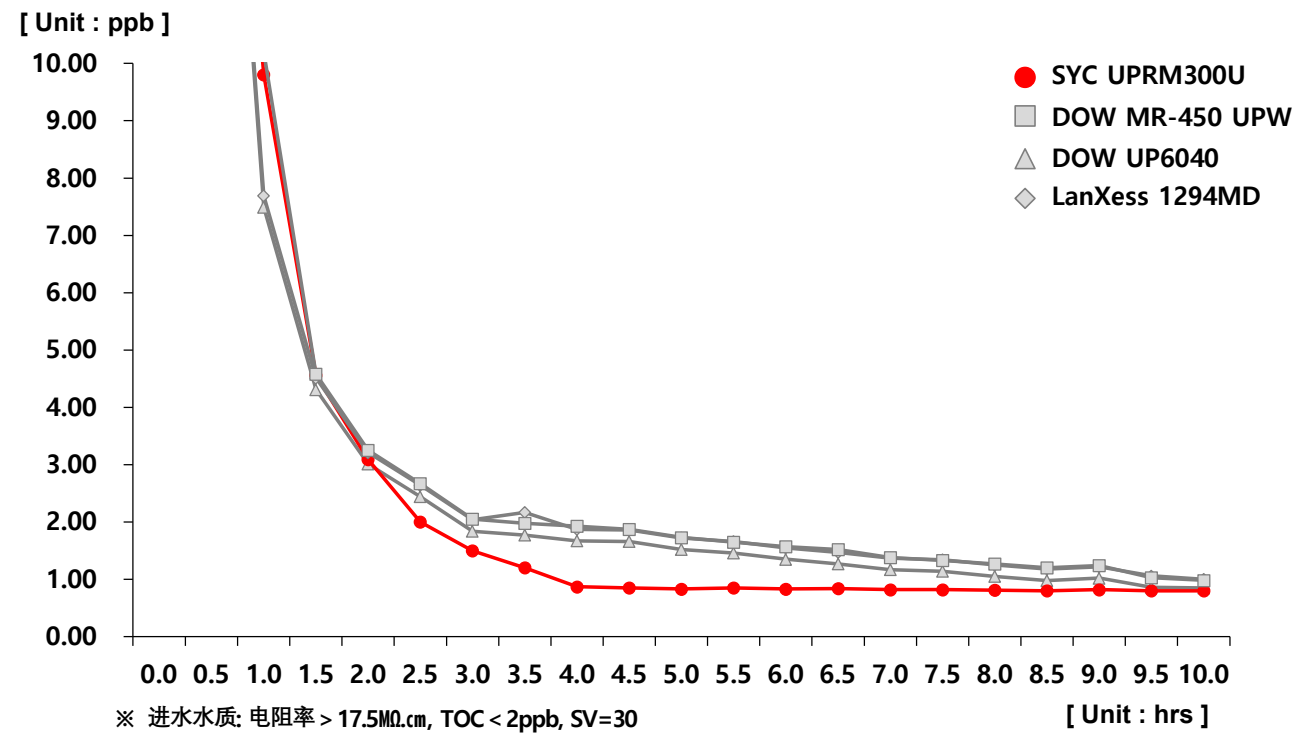
性能比较 (电阻率) Performance comparison (Resistivity)



## 产品比较

### UPRM300U

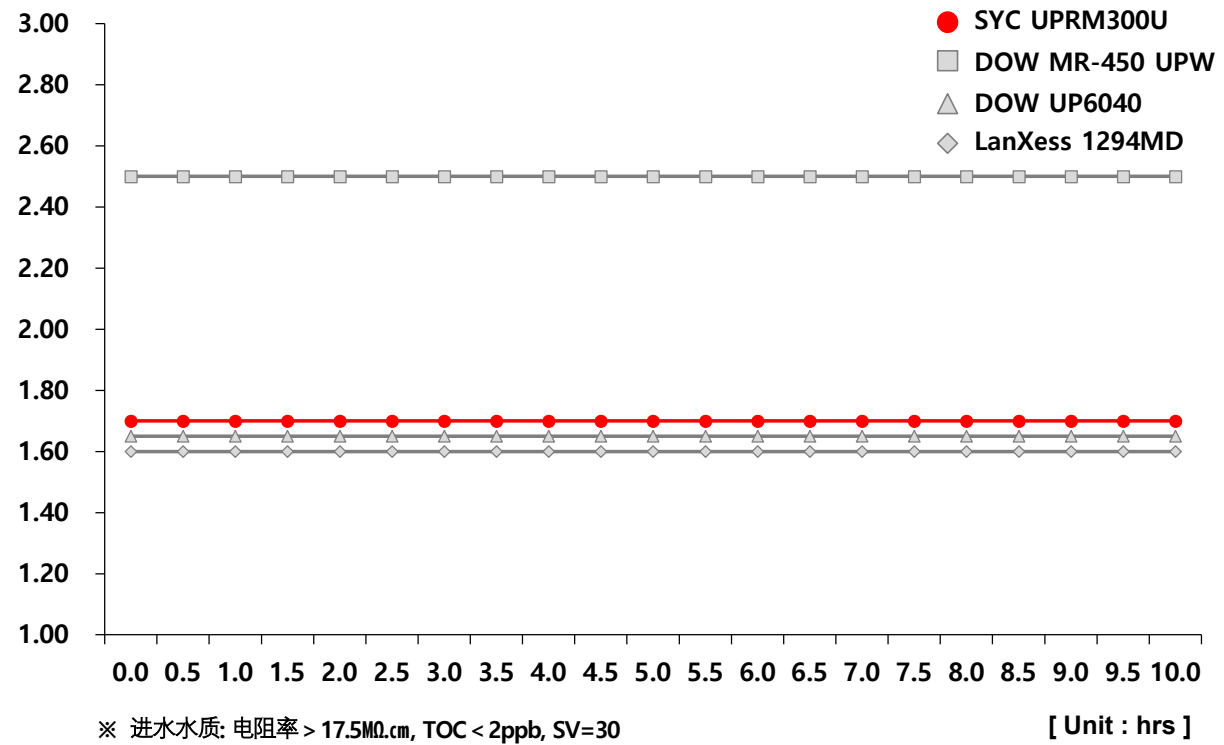
性能比较 ( $\Delta$ TOC) Performance comparison ( $\Delta$ TOC)



## 产品比较

### UPRM300U

性能比较 ( $\Delta P$ ) Performance comparison ( $\Delta P$ )



产品比较

UPRM300U

交换金属比较 Trace Metal comparison

[ Unit : ppm, as Dry Base ]

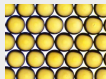
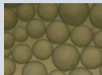
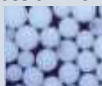
제품명	Al	Ca	Fe	K	Mg	Na	Si	Li	B	Ti	Cr	Mn	Co	Ni	Cu	Zn	Sr	Mo	Sn	Ba	Pb
SYC UPRM300U	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dupont MR-450 UPW	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dupont UP6040	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
LanXess 1294MD	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5



# TRILITE 超纯水树脂： 比较资料

## Cross Reference Guide

### Cross Reference Guide

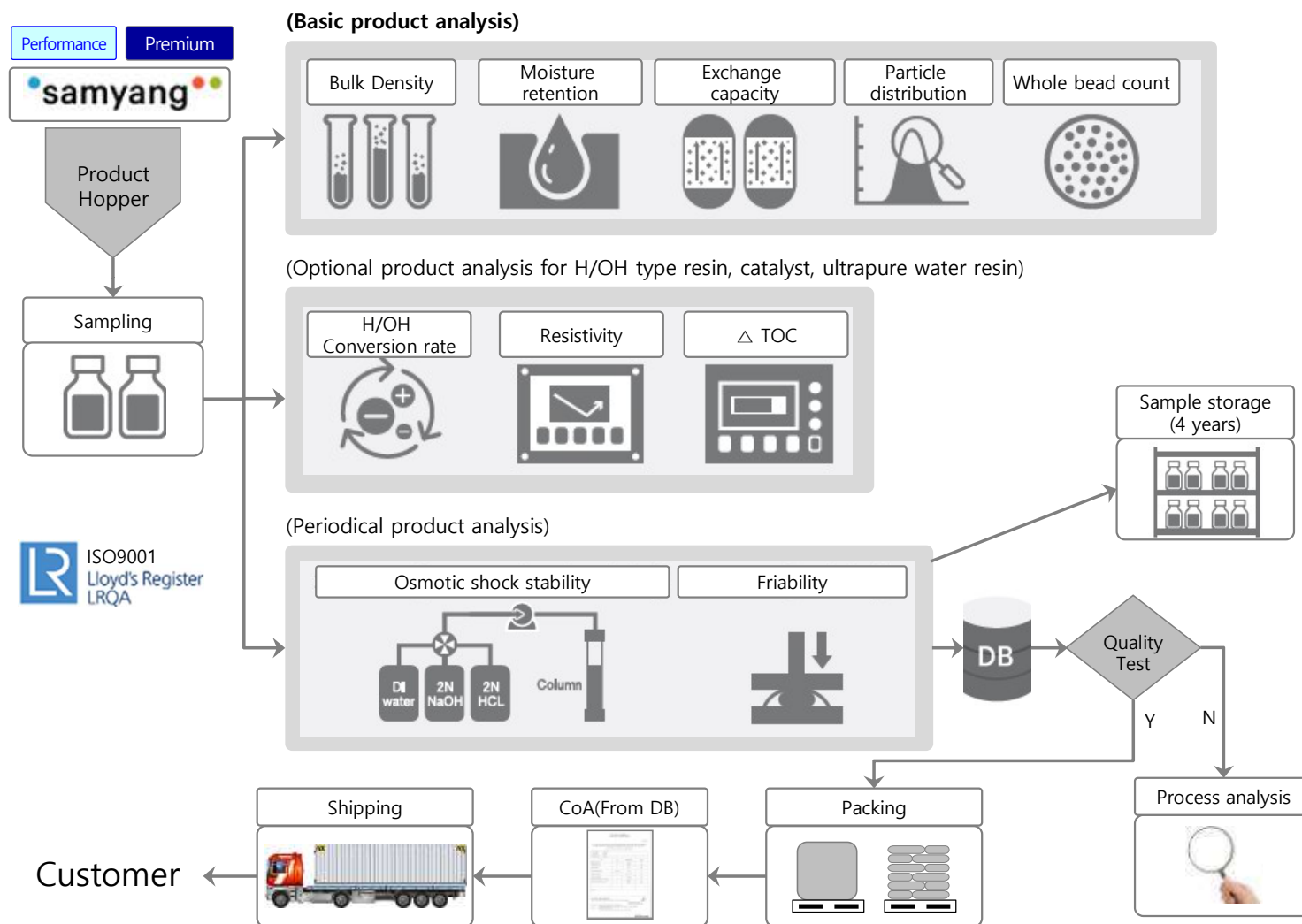
Type		Samyang TRILITE	Mitsubishi DIAION	Dupont Amberlite/Ambertec	Lanxess Lewatit	Purolite
		UC 1.1 ↓	UC 1.1 ↓	UC 1.1 ↓	UC 1.1 ↓	UC 1.2 ↓
UPS Gel 	SAC	MC-08	UBK08	HPR1100/1200 Na	MP S100	PFC/PPC100
		MC-08H	UBK08H	HPR1200 H	MP S100H	PFC/PPC10 0H
		MC-10	UBK10	HPR1300 Na	MP S108	SGC-650C
		MC-10H/MC-10SH	UBK10H	HPR1300/1400/650 H	MP S108H	SGC-650C H
	SAC (Chromatography)	MC-14(M)H		HPR1600 H		
		MCK series	UBK500 series	Refer to Chromatographic resin cross reference guide.		
	SBA_Type 1	MA-12	UBA120	HPR4200/4800 Cl	MP M500	PFA/PPA400
		MA-12OH	UBA120OH	HPR4200/4800 OH	MP M500 OH	PFA/PPA400 OH
		MA-10	UBA100	HPR4700/550 Cl	MP M800	SGC-550A
		MA-10OH/MA-10SOH	UBA100OH	HPR4700/550 OH	MP M800OH	SGC-550A OH
		MA-15	UBA150	HPR4700/550 Cl	MP M800	SGC-550A
	SBA_Type 2	MA-15OH	UBA150OH	HPR4700/550 OH	MP M800OH	SGC-550A OH
		MA-20	UBA200	HPR4100 Cl	MP M600	PFA/PPA200
	Mixed Bed (UPW)	UPRM100U			NM60	UCW 3600
		UPRM200U ✓	SMT100L	UP6150	NM60SG 1292MD	UCW 3700
		UPRM300U ✓ UPRM400U ✓	SMT200L	UP6040 MR-300 UPW MR-450UPW	1294MD 1296MD	UCW 9966
UPS Porous	WBA	AW80/AW90		HPR9500	MP64/MP68	
		UC 1.6 ↓	UC 1.6 ↓	UC 1.6~1.8 ↓		
Gaussian Gel 	SAC	KC-07/KC-08	SK1B	HCR-S, IRC120 Na	C249/C267	C100
	SAC_Food grade	KH-70/KH-80		HCR-S/S, SR1L		C100E
	SBA	KA-10	SA10		ASB1	A400
		KA-11	SA11			
		KA-12	SA12	IRA402 Cl		A600
		KA-20	SA20	IRA410 Cl	ASB1	A200
Gaussian Porous 	Mixed Bed	SM200/210/300		MB20/MB9L	NM91	MB400
	SAC	CMP/SPC Series	PK series		SP120	C150, C160
	SBA	AMP Series	PA series	IRA900/910 Cl	MP500	A500
	SBA(Food, Styrene)	AMP14(L)	PA308	FPA90/FPA900	S6368	A502PS
	SBA(Food, Acryl)	ASP10		FPA98	S5528	A860S
	WAC	WCA10L	WK40/WK60L	IRC83	CNP80	C105
	WBA	AW30	WA30	IRA96	MP62	A100
	Chelating	CLR series	CR series		TP207/208	S930Plus
Inert resin		TR70/TR30		14i, 62i, 600i	IN42	IP1, IP4

# TRILITE

超纯水树脂:

- 产品分析
- 质量控制

## Product Analysis & Quality control



# 品质证书 Quality assurance system

为了保持ISO9001质量认证，我们定期实施质量审核，并在必要时改进质量控制流程。  
此外，三养已获得出口伊斯兰国家的HALAL认证，以及满足电站质量标准的Veritas认证。

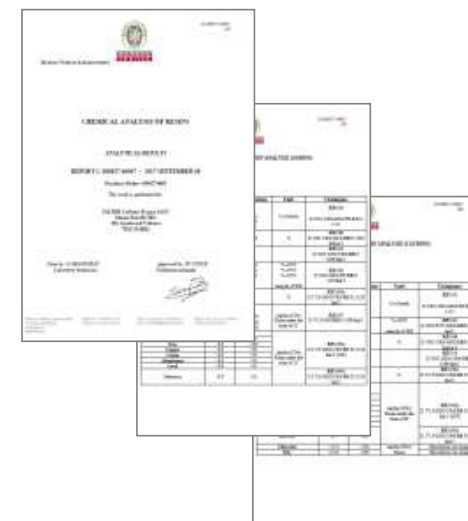
## ISO9001 Certificate



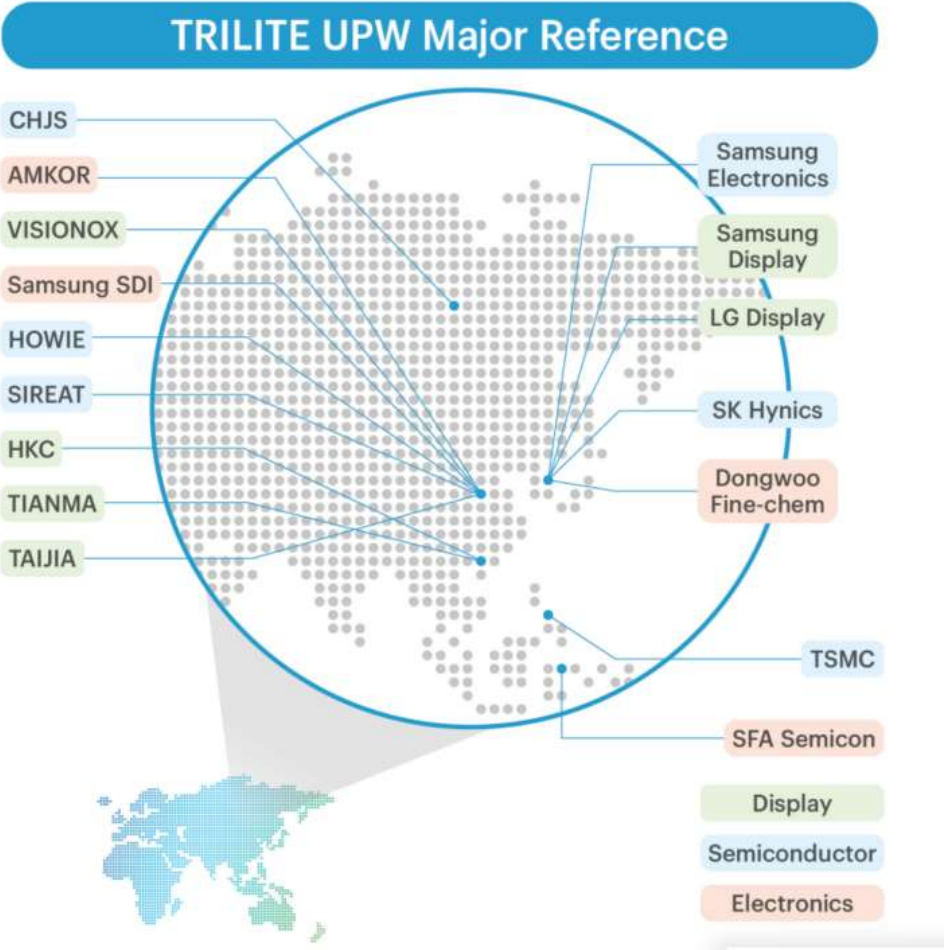
## HALAL Certificate



## Veritas Certificate



TRILITE  
超纯水等级  
参考



产业	顾客	产品
Semiconductor	Samsung Electronics	UPRM400U
Semiconductor	CHJS	UPRM400U
Semiconductor	SIREAT	UPRM300U
Semiconductor	HOWIE	UPRM300U
Fine chemicals (H <sub>2</sub> O <sub>2</sub> )	Mitsubishi Gas Chemical	UPRM400U
Display	TAIJIA	UPRM200U
Solar panel	LONGI	UPRM200U
Semiconductor	SFA Semicon	UPRM200U
Display	TIANMA	UPRM200U
Display	HKC	UPRM200U
Display	VISIONOX	UPRM200U
Semiconductor	Amkor	UPRM300U
Fine chemicals	DONGWOO FINE-CHEM	UPRM300U
Display	Samsung Display	UPRM200U
Display	LG Display	UPRM200U
Electronics	Samsung SDI	UPRM200U

# 参考目录

## TRILITE® 离子交换树脂

### Oil & Petrochemicals

 SK energy	 GS Caltex	 LOTTE CHEMICAL	 LG Chem	 Sipchem Sahara International Petrochemical Company	 Al-Bayroni Al-Jubali Fertilizer Company	 Al-Razi Saudi Methanol Company	 SABIC
 SK chemicals	 S-OIL	 KOREA PETROCHEMICAL IND. CO., LTD.	 Hyundai Oilbank	 MA'ADEN Saudi Arabian Mining Company	 APPC Advanced Petrochemical Co.	 ADNOC Abu Dhabi National Oil Company	 TAKREER Abu Dhabi Oil Refining Company
 Hanwha TOTAL	 Hansol Chemical	 LG MMA	 KUMHO P&B	 Formosa Chemicals & Fiber	 PUPUK Fertilizers	 BP Petrochemicals	 MITSUBISHI MOTORS
 Indian Oil Corporation Ltd	 INDIA GLYCOL LIMITED	 Reliance Industries Limited	 SOCAR State Oil Company Azerbaijan Republic				

### Engineering Companies

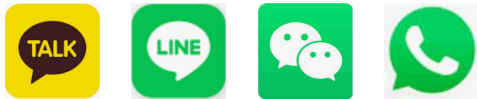
 SAMSUNG ENGINEERING	 DAELIM ENGINEERING	 TSK ENGINEERING	 Hansoo Technical Service
 MITSUBISHI HEAVY INDUSTRIES	 VEOLIA KOREA		

### Major Electronics

 Samsung Electronics	 SK hynix	 Samsung Display	 LG Display
 Samsung SDI	 DONGWOO FINE-CHEM	 SFA SEMICONDUCTOR	 PSMC Pioneer Semiconductor Materials Corporation
 SMIC Semiconductor Manufacturing International Corporation	 TIANMA	 Visionox	

# Thank you

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