



TRILITE® Ion exchange resins

(For water treatment and petrochemical applications)

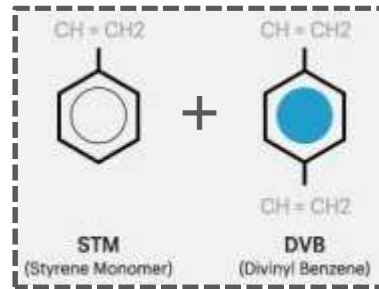


Samyang Corporation Ion exchange resin
31, Jongno 33-gil, Jongno-gu, Seoul, Korea
TEL) 82-2-740-7732~7, FAX) 82-2-740-7790
<http://samyangtrilite.com>

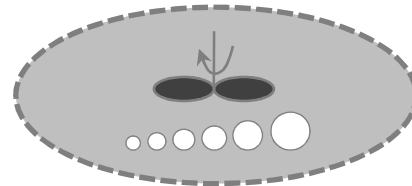


5. Cutting-edge Technology Droplet Generator

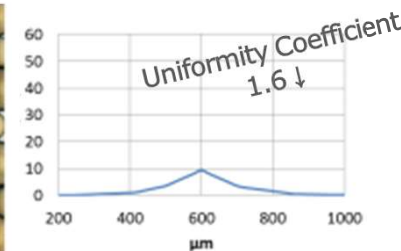
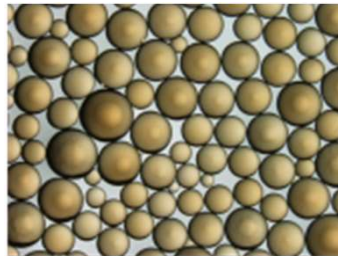
Conventional Technology
(Raw Material Adjustment)



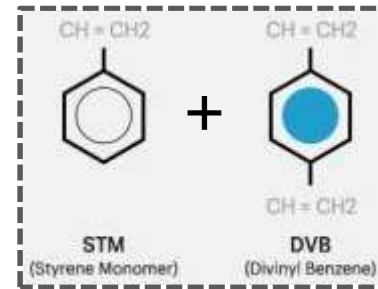
(Polymerization - Agitation)



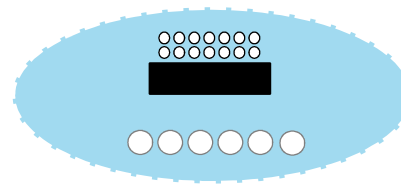
(Post-treatment - Functional Group)



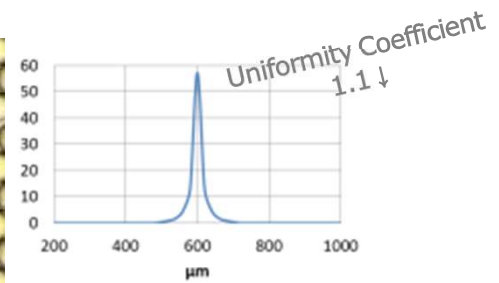
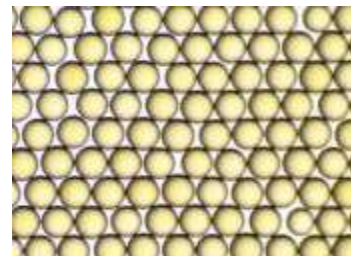
UPS(uniform particle sized) Technology
(Raw Material Adjustment)



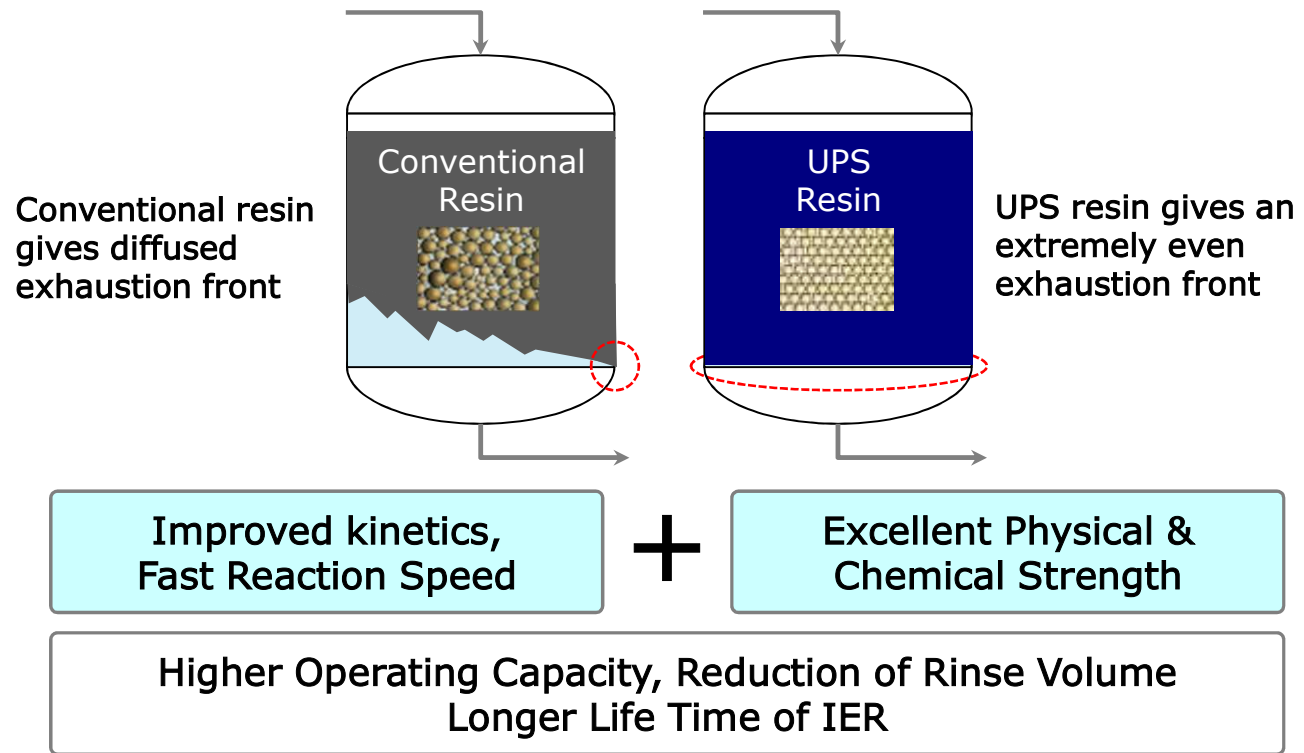
(Polymerization - Droplet Generator)



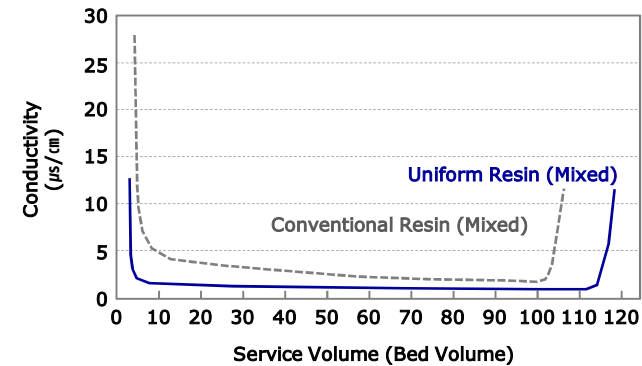
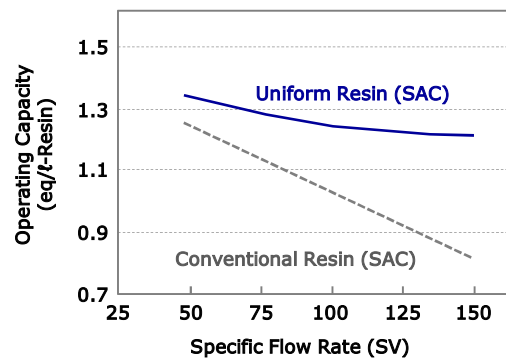
(Post-treatment - Functional Group)



6. Next Generation IER, high performance low cost 7/21

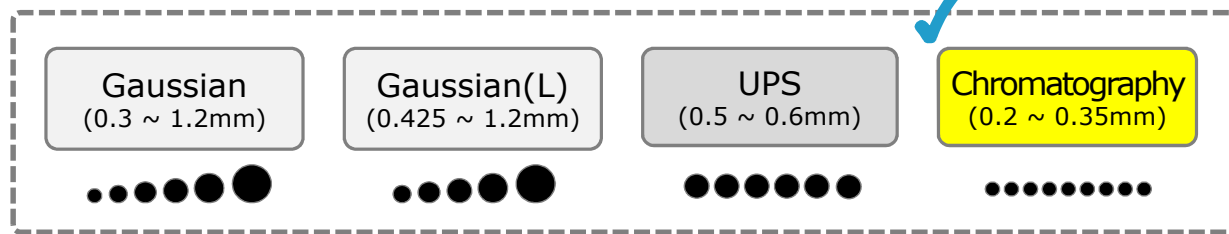


“Lower Running Cost and Capital Expenditure”

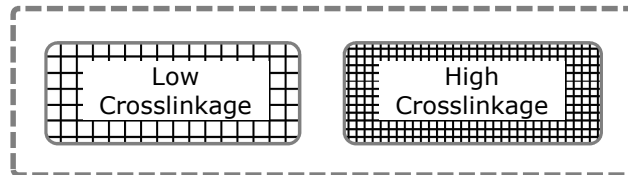


7. Product line of TRILITE

(Particle Distribution, Size)



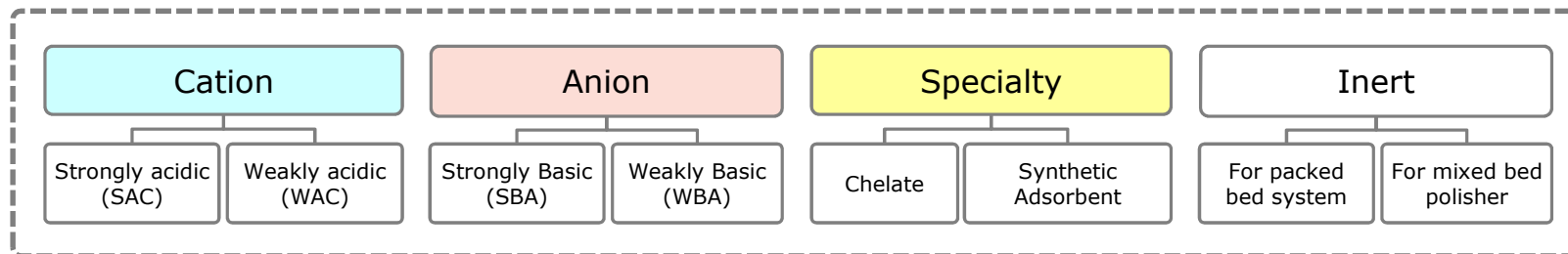
(Crosslinkage)



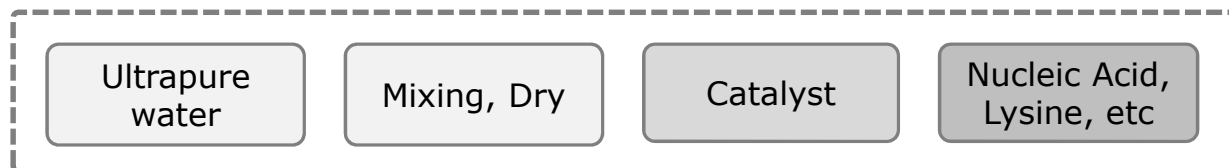
(Porosity)



(Functional Group)



(Post-treatment / Tailored Resin)



7. Product line of TRILITE

Water treatment

- Softening
- Demineralization
- Condensate polishing
- Nuclear power

Catalyst

Ultrapure water

Chromatography

- Fructose/glucose separation
- Amino acid separation
- Acid purification

Food

- Starch sugar refining
- Sugar refining
- Nucleic acid, lysine separation

Chelating resins

- Secondary brine purification
- Wastewater treatment

Synthetic adsorbents

Ready to use mixed resins

Layered bed anion resins

Inert resins

EO/EG cycle water treatment



7. Product line of TRILITE

(Particle Distribution, Size)

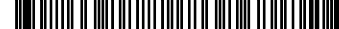


(Classification by IER layer)

| | |
|-------------|--|
| Single Bed | |
| Layered Bed | |
| Mixed Bed | |

(Classification by regeneration system)

| Co-current Regeneration System | Counter-current Regeneration System | | |
|--------------------------------------|-------------------------------------|------------------|--------------------|
| | Water Blocking System | Packed Bed | |
| | | Upflow System | Downflow System |
| | | | |
| Gaussian | Gaussian or L-type | UPS IER | |



7. Product line of TRILITE



※ TEC: Total Exchange Capacity

| Uniformity Coefficient (U.C) | Strongly acidic cation resins (SAC) | | Strongly basic anion resins (SBA) | | |
|------------------------------|-------------------------------------|------------|-----------------------------------|------------|------------|
| | Grade name | TEC (eq/ℓ) | Type | Grade name | TEC (eq/ℓ) |

Performance Product Line

| UPS | 1.1 ↓ | MC-08 | 2.0 ↑ | Type1 | MA-12 | 1.3 ↑ | | |
|-----|-------|-------|-------|-------|-------|-------|-------|--------|
| | | | | | MC-10 | 2.2 ↑ | MA-10 | 1.35 ↑ |
| | | | | | MC-14 | 2.5 ↑ | MA-15 | 1.4 ↑ |
| | | | | Type2 | MA-20 | 1.3 ↑ | | |

Basic Product Line

| Gaussian | 1.4~ 1.6 ↓ | SCR-B | 2.0 ↑ | Type1 | SAR10 | 1.3 ↑ |
|----------|---------------|-------|-------|-------|-------|-------|
| | | | | | SAR12 | 1.3 ↑ |
| | | | | Type2 | SAR20 | 1.3 ↑ |




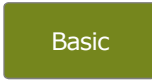






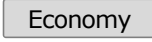
Economy Product Line

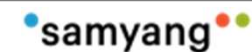
| UPS | 1.1~ 1.2 ↓ | UKC-08 | 2.0 ↑ | Type1 | UKA-12 | 1.3 ↑ |
|----------|---------------|--------|-------|-------|--------|-------|
| | | UKC-10 | 2.2 ↑ | WBA | AW80 | 1.6 ↑ |
| | | UKC-12 | 2.3 ↑ | | | |
| Gaussian | 1.4~ 1.6 ↓ | KC-07 | 1.9 ↑ | Type1 | KA-10 | 1.3 ↑ |
| | | KH-70 | 1.9 ↑ | | KA-12 | 1.3 ↑ |
| | | KC-08 | 2.0 ↑ | Type2 | KA-20 | 1.3 ↑ |
| | | KH-80 | 2.0 ↑ | | | |



7. Product line of TRILITE

※ TEC: Total Exchange Capacity

|  | Type | Strongly acidic cation resins (SAC) | | | Strongly basic anion resins (SBA) | | | |
|---|---|-------------------------------------|------------|--|-----------------------------------|------------------|------------|--|
| | | Grade name | TEC (eq/ℓ) | Particle distribution | Type | Grade name | TEC (eq/ℓ) | Particle distribution |
|  | UPS Gel  | MC-08 | 2.0 ↑ | 0.55~0.65mm | Type1 | MA-12 | 1.3 ↑ | 0.53~0.63mm |
| | | MC-08H | 1.8 ↑ | 0.57~0.67mm | | MA-12OH | 1.0 ↑ | 0.57~0.67mm |
| | | MC-10 | 2.2 ↑ | 0.60~0.70mm | | MA-10 | 1.35 ↑ | 0.50~0.60mm |
| | | MC-10H | 1.9 ↑ | 0.61~0.71mm | | MA-100H | 1.0 ↑ | 0.54~0.64mm |
| | | MC-14 | 2.5 ↑ | 0.60~0.70mm | | MA-15 | 1.4 ↑ | 0.55~0.65mm |
| | | MC-14H | 2.4 ↑ | | | MA-150H | 1.2 ↑ | 0.58~0.68mm |
|  | Gaussian  | SCR-B | 2.0 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm | Type1 | SAR10(MB) | 1.3 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm |
| | | | | | Type2 | SAR20(MB) | 1.3 ↑ | |
| | | | | | Type1 | UKA-12 | 1.3 ↑ | |
|  | UPS Gel  | UKC-08 | 2.0 ↑ | 0.55~0.65mm | Type1 | UKA-12 | 1.3 ↑ | 0.55~0.65mm |
| | | UKC-10 | 2.2 ↑ | 0.55~0.65mm | | | | |
| | | UKC-12 | 2.3 ↑ | 0.60~0.70mm | | | | |
| | Gaussian  | KC-07 | 1.9 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm | Type1 | KA-10 | 1.3 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm |
| | | KH-70 | 1.9 ↑ | | KA-12 | 1.3 ↑ | | |
| | | KC-08 | 2.0 ↑ | | Type2 | KA-20 | 1.3 ↑ | |
| KH-80 | 2.0 ↑ | | | | | | | |
| Functional group | (Polystyrene+DVB) + Sulfonate | | | (Polystyrene+DVB) + Type1 : TMA, trimethylamine Type2 : DMEA, dimethylethanolamine | | | | |
| Type | Weakly acidic cation resins (WAC) | | | Weakly basic anion resins (WBA) | | | | |
|  | Gaussian, UPS Porous | WCA10L | 4.2 ↑ | 0.425~1.2mm | WBA | AW90 | 1.6 ↑ | 0.50~0.60mm |
|  | UPS Porous | | | | | AW80 | 1.6 ↑ | 0.40~0.60mm |
|  | Gaussian Porous | | | | | AW30L | 1.5 ↑ | 0.425~1.2mm |
| Functional group | (Polystyrene+DVB) + Carboxylate | | | (Polystyrene+DVB) + Tertiary Amine | | | | |



7. Product line of TRILITE

Water treatment

| Softening system | | Line | SAC | SBA | WAC | WBA |
|---------------------------------|--|-------------|--|-----|-----|-----|
| Softening (Industrial grade) | | Performance | MC-08 MC-10 | | | |
| | | Basic | SCR-B | | | |
| | | Economy | UKC-08 UKC-10, UKC-12 KC-07, KC-08 | | | |
| Softening (Food grade) | | Economy | KH-70 KH-80 | | | |

Sodium hypochlorite(NaClO), Free chlorine(Cl₂), Ozone(O₃)

When softeners are used with oxidizing agents such as sodium hypochlorite or free chlorine, it is recommended to use highly crosslinked strongly acidic cation ion exchange resin with high resistance to oxidation.

| IER Selection | | ClO ₂ Concentration | Cl ₂ or O ₃ Concentration |
|---------------|-------------------------|--------------------------------|---|
| Performance | MC-08 | 0.1ppm ↓ | 0.2ppm ↓ |
| Basic | SCR-B | | |
| Economy | UKC-08, KC-07, KC-08 | | |
| Performance | MC-10 | 0.15ppm ↓ | 0.3ppm ↓ |
| Economy | UKC-10 | | |
| Economy | UKC-12 | 0.2ppm ↓ | 0.4ppm ↓ |

Food grade softening

When food grade softening is required, it is needed to select a suitable food grade ion exchange resin. Examples are as follows.



KH-80 SCR-B SCR-BL



(NSF Test method)
100 ml of ion exchange resin is put into 100 ml of water at 70°C, and APHA(unit of chromaticity) is measured with a visible spectrophotometer.

| IER | Grade | Spec. | Day 1 | Day 2 | Day 3 | Day 4 | Day 7 |
|--------|-------|-------|-------|-------|-------|-------|-------|
| KH-80 | Food | < 25 | 12 | 13 | 13 | 13 | 14 |
| SCR-B | Tech | - | 145 | 149 | 153 | 160 | 183 |
| SCR-BL | Tech | - | 53 | 55 | 191 | 257 | 347 |



7. Product line of TRILITE

Water treatment



| Demineralization system | | Line | SAC | SBA | WAC | WBA |
|---|--|-------------|---------------------------|--------------------------|--------|-------|
| 2B2T (2Bed 2Tower) Cation Exchanger + Anion Exchanger | | Performance | MC-08 MC-10 | MA-12 MA-20 | | |
| | | Basic | SCR-B | SAR10 SAR20 | | |
| 2B3T Cation Exchanger + Degasifier + Anion Exchanger | | Economy | UKC-08 UKC-10 KC-08 | UKA-12 KA-12 KA-20 | | |
| | | | | | | |
| Working MB (Mixed Bed) | | Performance | MC-08 | MA-20P | | |
| | | Basic | SCR-B | SAR20MB | | |
| 2B2T or 2B3T + MBP (Mixed Bed Polisher) | | Performance | MC-08 MC-10 | MA-10P | | |
| | | Basic | SCR-B | SAR10MB | | |
| 3B3T+MBP | | Performance | MC-08 MC-10 | KA18LB | | AW90 |
| | | Basic | SCR-B | KA18LB | | AW80 |
| | | Economy | UKC-08 UKC-10 | KA18LB | | AW30L |
| 4B3T+MBP | | Performance | MC-08 MC-10 | KA18LB | WCA10L | AW90 |
| | | Basic | SCR-B | KA18LB | WCA10L | AW80 |
| | | Economy | UKC-08 UKC-10 | KA18LB | WCA10L | AW30L |
| 4B3T+MBP+ CPP (Condensate Polisher) | | Performance | MC-10H MC-14H | MA-100H MA-150H | | |

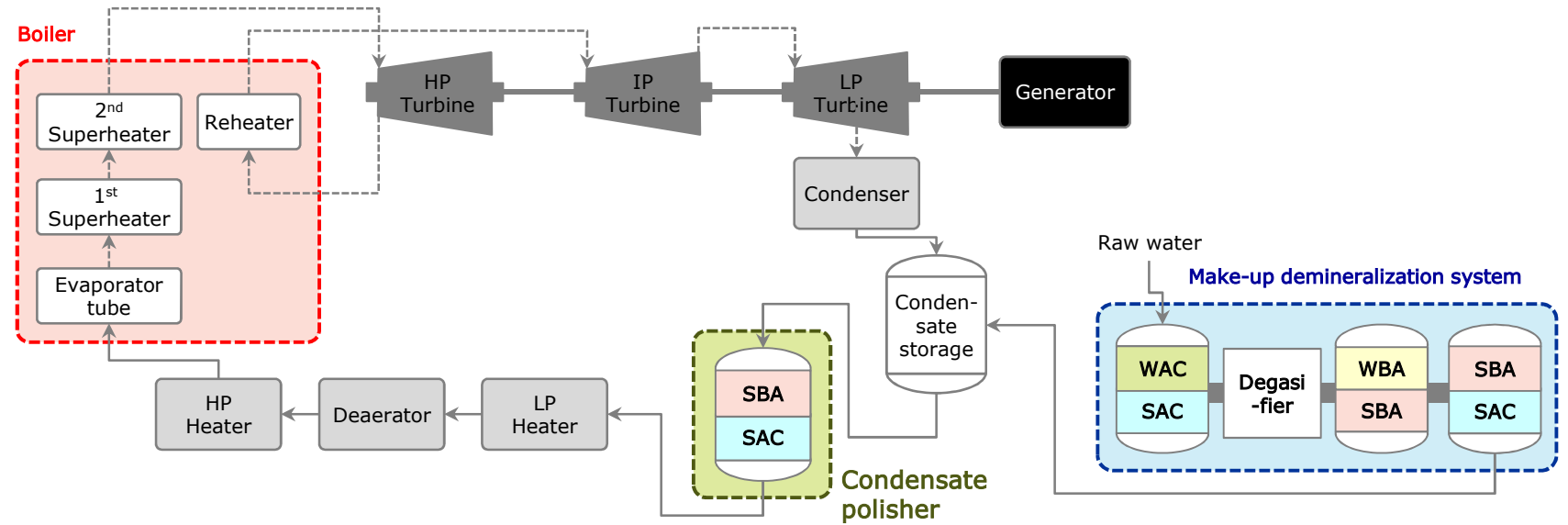
※ Anion grade name + (P) means anti-clumping treatment. Anion resin used for MB or MBP requires anti-clumping treatment that helps separation of cation and anion.

7. Product line of TRILITE

Water treatment



(Typical power plant steam turbine loop and IER selection)



Fast kinetics according to high uniformity, higher separation rate between Cation & Anion, high physical & chemical strength



| Condensate polishing resins | | | | | | | | |
|-------------------------------------|------------|------------|------------|-----------------------------------|--------------|------------|------------|-----------------------|
| Strongly acidic cation resins (SAC) | | | | Strongly basic anion resins (SBA) | | | | |
| | Type | Grade name | TEC (eq/ℓ) | Particle distribution | Type | Grade name | TEC (eq/ℓ) | Particle distribution |
| Gaussian | Porous | CMP28L | 2.05 ↑ | 0.425~1.2mm | Porous type1 | AMP18L | 1.3 ↑ | 0.425~1.2mm |
| | | CMP28LH | 1.8 ↑ | | | AMP18LOH | 1.0 ↑ | |
| UPS | Gel | MC-10 | 2.2 ↑ | 0.60~0.70mm | Gel type1 | MA-10 | 1.35 ↑ | 0.50~0.60mm |
| | | MC-10H | 1.9 ↑ | 0.61~0.71mm | | MA-10OH | 1.0 ↑ | 0.54~0.64mm |
| | | MC-14 | 2.5 ↑ | 0.50~0.60mm | | MA-15 | 1.4 ↑ | 0.55~0.65mm |
| | | MC-14MH | 2.4 ↑ | | | MA-15OH | 1.2 ↑ | 0.58~0.68mm |



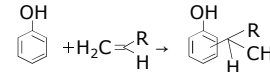
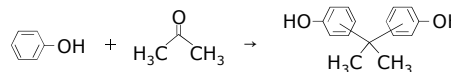
7. Product line of TRILITE



※ TEC: Total Exchange Capacity

| Strongly acidic cation resins for catalyst (SAC for catalyst) | | | | | | | | | |
|---|--|------------|-----------------------|--|----------|--|------------|-----------------------|--|
| Type | Grade name | TEC (eq/l) | Particle distribution | | Type | Grade name | TEC (eq/l) | Particle distribution | |
| Gaussian | Gel catalyst | PCC30H | 1.1 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm (XL-type) 0.7~1.2mm | UPS | Gel catalyst | MC-04H | 1.2 ↑ | 0.47~0.57mm |
| | | PCC40H | 1.2 ↑ | | | | SPC400H | 1.0 ↑ | |
| | Porous Catalyst  | CMP08H | 1.0 ↑ | | Gaussian | Porous Catalyst  | SPC160H | 1.5 ↑ | (General type) 0.3~1.2mm (L-type) 0.425~1.2mm |
| | | CMP28H | 2.0 ↑ | | | | SPC180H | 1.5 ↑ | |
| | | SPC260H | 1.7 ↑ | | | | SPC320H | 1.9 ↑ | |
| | | SPC280H | 2.0 ↑ | | | | | | |

(Typical catalysis application and selection of catalytic resins)

| Application | Reaction | Catalytic resins | Equivalent |
|-----------------------------------|--|---|----------------|
| Hydrolysis of methyl acetate | $CH_3COOCH_3 + H_2O \rightarrow CH_3COOH + CH_3OH$ | CMP08LH | |
| Esterification reaction | $RCOOH + ROH \rightarrow RCOOR + H_2O$ | PCC40H, MC-08H, CMP08LH, SPC160H, SPC180H, SPC400LH | |
| Synthesis of methyl methacrylate | $CH_2 = C \begin{matrix} \diagup CH_3 \\ \diagdown COOH \end{matrix} + CH_3OH \rightarrow CH_2 = C \begin{matrix} \diagup CH_3 \\ \diagdown COOCH_3 \end{matrix} + H_2O$ | SPC180H | |
| Alkylation of phenol |  | SPC260H, SPC320H | Amberlyst15Wet |
| Synthesis of Bisphenol A |  | PCC30H, PCC40H | |
| Methyl tertiary butyl ether(MTBE) | $H_2C \begin{matrix} \diagup CH_3 \\ \diagdown CH_3 \end{matrix} + CH_3OH \rightarrow H_3C \begin{matrix} \diagup CH_3 \\ OMe \\ \diagdown CH_3 \end{matrix}$ | SPC280H | Amberlyst35Wet |
| t-amyl methyl ether(TAME) | $H_2C \begin{matrix} \diagup CH_3CH_3 \\ \diagdown CH_3 \end{matrix} + CH_3OH \rightarrow H_3C \begin{matrix} \diagup CH_3CH_3 \\ OMe \\ \diagdown CH_3 \end{matrix}$ | SPC160H, SPC180H | |



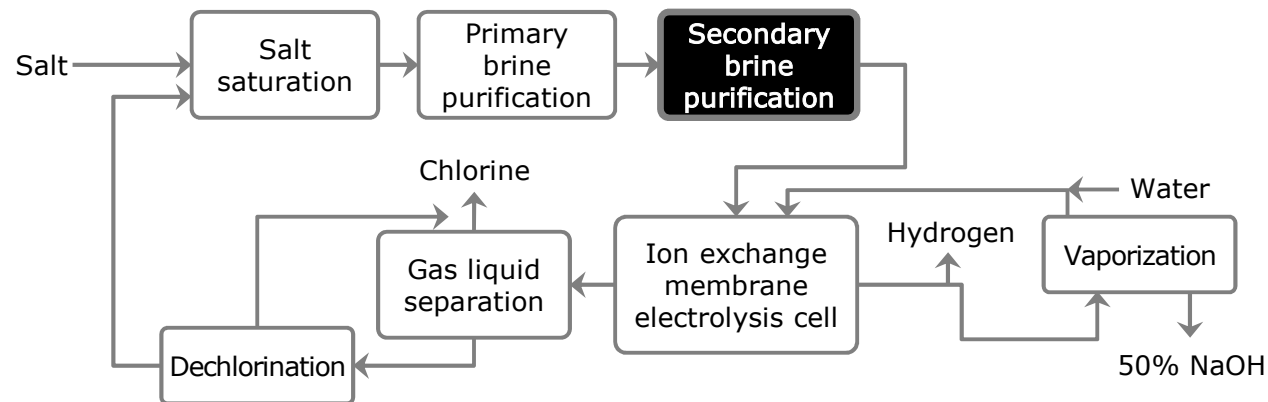
7. Product line of TRILITE

Chelating resins

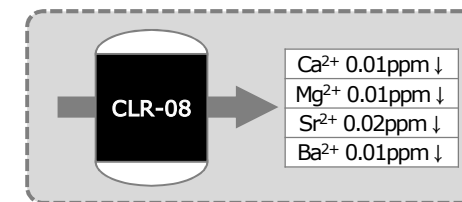


| TRILITE 삼양 트리라이트 Ion Exchange Resin | | Chelating resins | | | | | |
|---|------------------|-------------------------|------------|--|-------------|-----------------------------|---|
| Grade name | Functional group | Ionic form | TEC (eq/ℓ) | Particle distribution | Application | Equivalent | |
| Gaussian | CLR-08 | Iminodiacetate | Na | Cu ²⁺ 0.5 ↑ Ca ²⁺ 0.4 ↑ | 0.4~1.0mm | Brine purification | Lewatit TP208 Amberlite IRC748 Diaion CR11 Purolite S930 |
| | CLR-09 | Aminomethyl phosphonate | Na | Ca ²⁺ 0.6 ↑ | 0.4~1.0mm | Brine purification | Lewatit TP260 Amberlite IRC747 Purolite S940 |
| | CLR-10 | Thiuronium | H | 1.1 ↑ | 0.3~1.25mm | Mercury removal | Eporous-Z7 Purolite S924 |
| | CLR-20 | Polyamine | OH | 4mol as copper ↑ | 0.4~1.25mm | Heavy metal removal | Diaion CR20 Eporous MX-8C |
| | CLR-B3 | Glucamine | Free base | 0.6eq/ℓ as boron ↑ | 0.3~1.25mm | Boron removal | Diaion CRB03 Amberlite IRA743 Purolite S108 |
| | CLR-B3UP | Glucamine | Free base | 0.6eq/ℓ as boron ↑ | 0.3~1.25mm | Boron polisher (TOC 5ppb ↓) | Diaion CRBT03 |
| | CLR-F | Aminophosphonate | Al | 11g as fluorine ↑ | 0.3~1.0mm | Fluoride removal | Eporous-K1 |
| | CLR-N | Triethylamine | Cl | 1.0 ↑ | 0.3~1.25mm | Nitrate removal | Amberlite IRA996 Purolite A520E |

(Typical process of chloro-alkali process)



(Secondary brine purification)

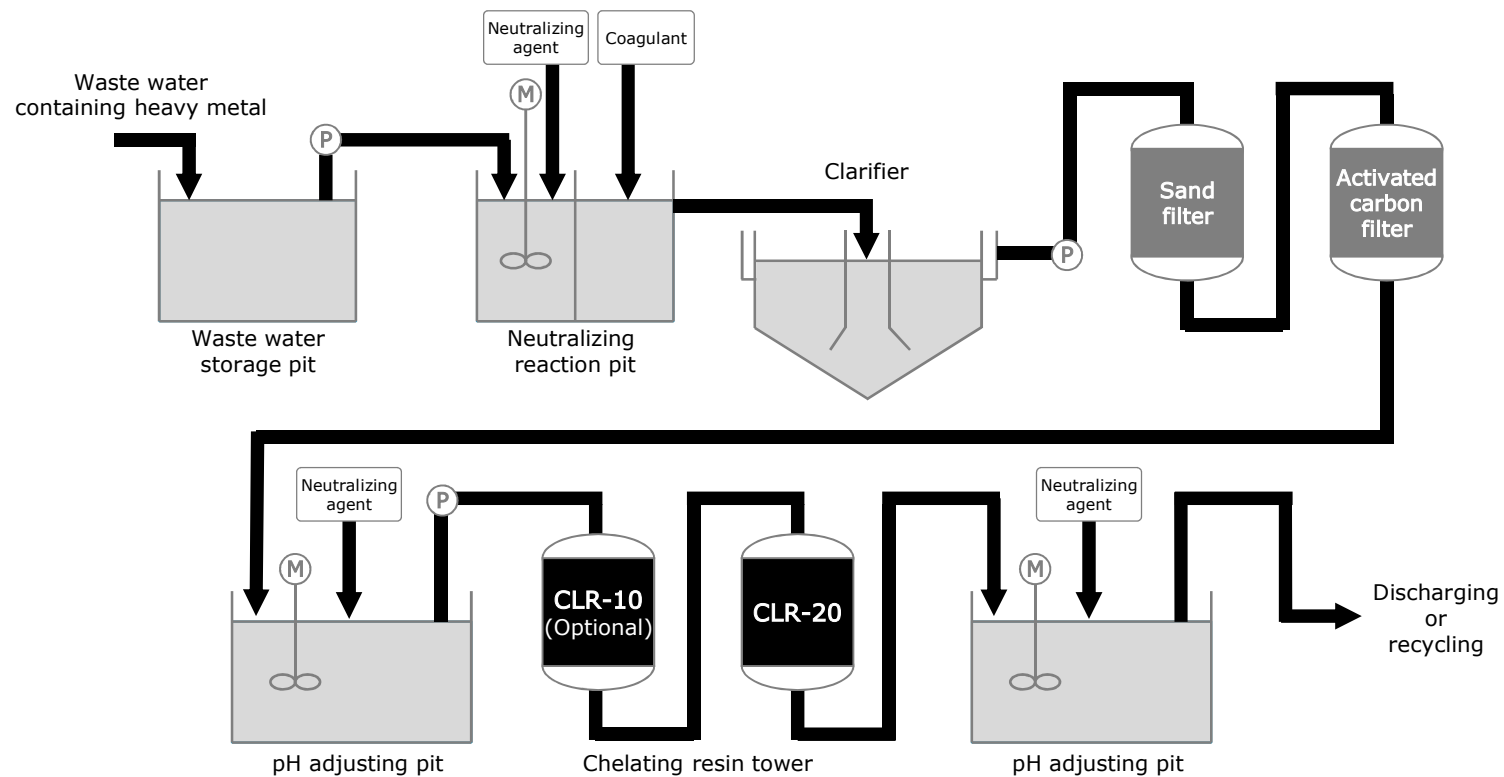
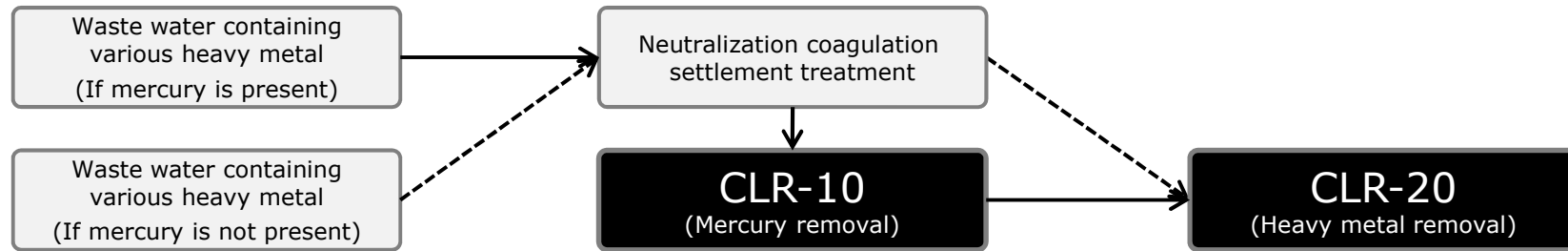


7. Product line of TRILITE

Chelating resins



(Typical process of removing heavy metal from waste water)



7. Product line of TRILITE

Ready to use mixed resins



(Selection of Ready to use mixed resins)

| Grade name | Feature & Application | Components | Treated Water Quality | |
|-----------------------------|--|--|-----------------------|---|
| SM200 | Simple production of pure water from tap water For Laboratories, Wire-cutting(EDM) | KC-08H(H ⁺ 99.0% ↑) KA-12OH(OH ⁻ 90.0% ↑) Mixed ratio(Volume) : 45:55 | Out | Guarantee) Resistivity > 10.0 MΩ·cm (in 10min.) Actual) Resistivity > 15.0 MΩ·cm (in 10min.) |
| | | | Feed | Conductivity 150μs/cm Potable water, SV36 |
| SM210 | Simple production of pure water from tap water For Laboratories, Wire-cutting(EDM) | SCR-BH(H ⁺ 99.0% ↑) SAR12OH(OH ⁻ 95.0% ↑) Mixed ratio(Volume) : 45:55 | Out | Guarantee) Resistivity > 15.0 MΩ·cm (in 10min.) Actual) Resistivity > 17.0 MΩ·cm (in 10min.) |
| | | | Feed | Conductivity 150μs/cm Potable water, SV36 |
| SM300 | High Resistivity and superb SiO ₂ removal ability MB for Post-RO and EDI | SCR-BH(H ⁺ 99.0% ↑) SAR12OH(OH ⁻ 95.0% ↑) Mixed ratio(Volume) : 40:60 | Out | Guarantee) Resistivity > 15.0 MΩ·cm (in 10min.) Actual) Resistivity > 17.0 MΩ·cm (in 10min.) |
| | | | Feed | Conductivity 10μs/cm RO outlet, SV36 |
| UPRM100U (UPS grade) | Very high resistivity Electronics Grade Ultrapure water | UPRC100U(H ⁺ 99.0% ↑) UPRA100U(OH ⁻ 95.0% ↑) Mixed ratio(Capacity) : 50:50 | Out | Guarantee) Resistivity > 17.0 MΩ·cm (in 10min.) Actual) Resistivity > 18.0 MΩ·cm (in 10min.) |
| | | | Feed | Conductivity 10μs/cm RO outlet, SV36 |
| UPRM200U (UPS grade) | Very high resistivity, Low ΔTOC level LCD, OLED Ultrapure water final polisher | UPRC200U(H ⁺ 99.0% ↑) UPRA200U(OH ⁻ 95.0% ↑) Mixed ratio(Capacity) : 50:50 | Out | Resistivity > 18.1MΩ·cm (in 30min.) ΔTOC < 5ppb (in 120min.) |
| | | | Feed | Resistivity > 17.5MΩ·cm, TOC < 2ppb, SV30 |
| UPRM300U (UPS grade) | Extremely high resistivity Extremely low ΔTOC level Metal ion < 0.1ppt Semiconductor Ultrapure water final polisher | UPRC300U(H ⁺ 99.9% ↑) UPRA300U(OH ⁻ 97.0% ↑) Mixed ratio(Capacity) : 50:50 | Out | Resistivity > 18.2MΩ·cm (in 30min.) ΔTOC < 1ppb (in 180min.) Metal ion < 0.1ppt |
| | | | Feed | Resistivity > 17.5MΩ·cm, TOC < 2ppb, SV30 |

(Pressure vessel for RO unit)



(Cartridge polisher for wire-cutting)



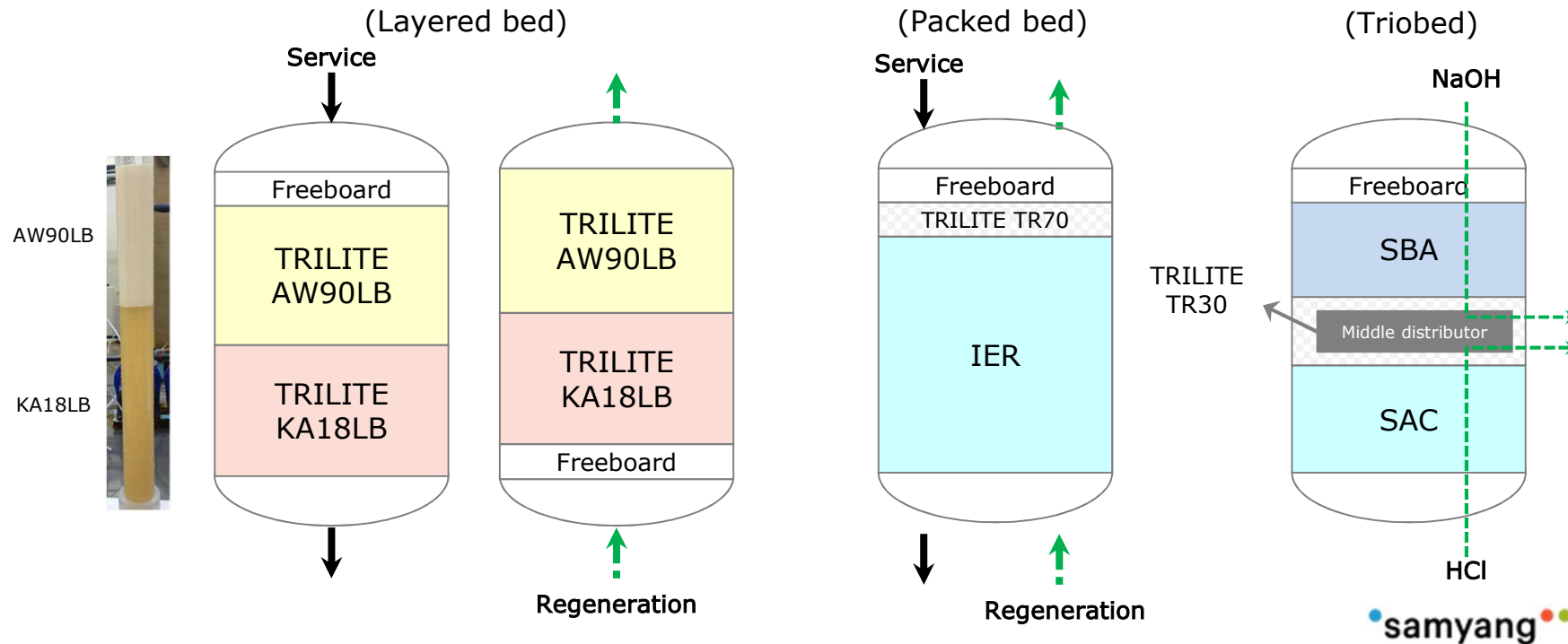
7. Product line of TRILITE

Layered bed anion resins
Inert resins



※ TEC: Total Exchange Capacity

| TRILITE 삼양 이온교환수지 Ion Exchange Resin | Layered bed anion resins | | | | Inert resins | | | | |
|--|--------------------------|------------|------------|-----------------------|--------------|------------------|-----------------------|-----------------------|----------------------------|
| | Type | Grade name | TEC (eq/l) | Particle distribution | Grade name | Matrix | Shipping density(g/l) | Particle distribution | Application |
| UPS | Porous WBA | AW90LB | 1.6 ↑ | 0.5~0.6mm | TR70 | Poly-ethylene | 500 | 1.2~1.8mm | Inert resin for packed bed |
| Gaussian | Gel type1 | KA18LB | 1.3 ↑ | 0.6~1.2mm | TR30 | Polystyrene +DVB | 725 | 0.7~0.9mm | Inert resin for triobed |



7. Product line of TRILITE

EO/EG cycle water treatment

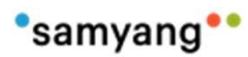
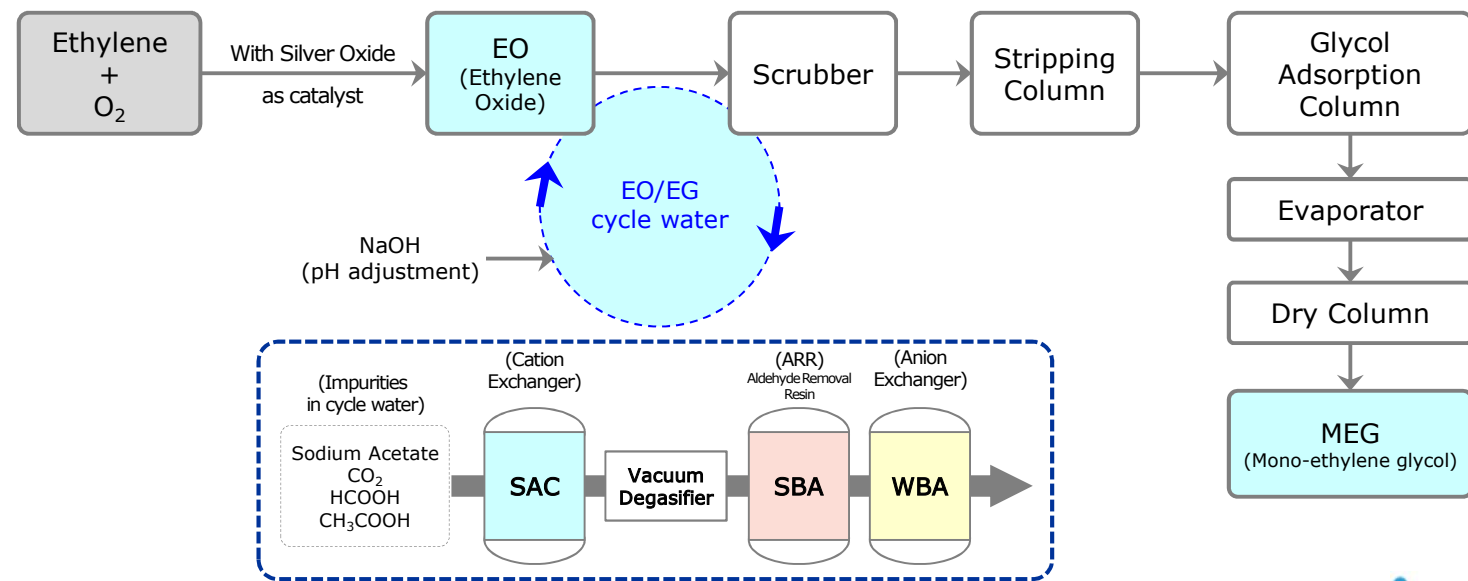


※ TEC: Total Exchange Capacity

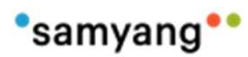
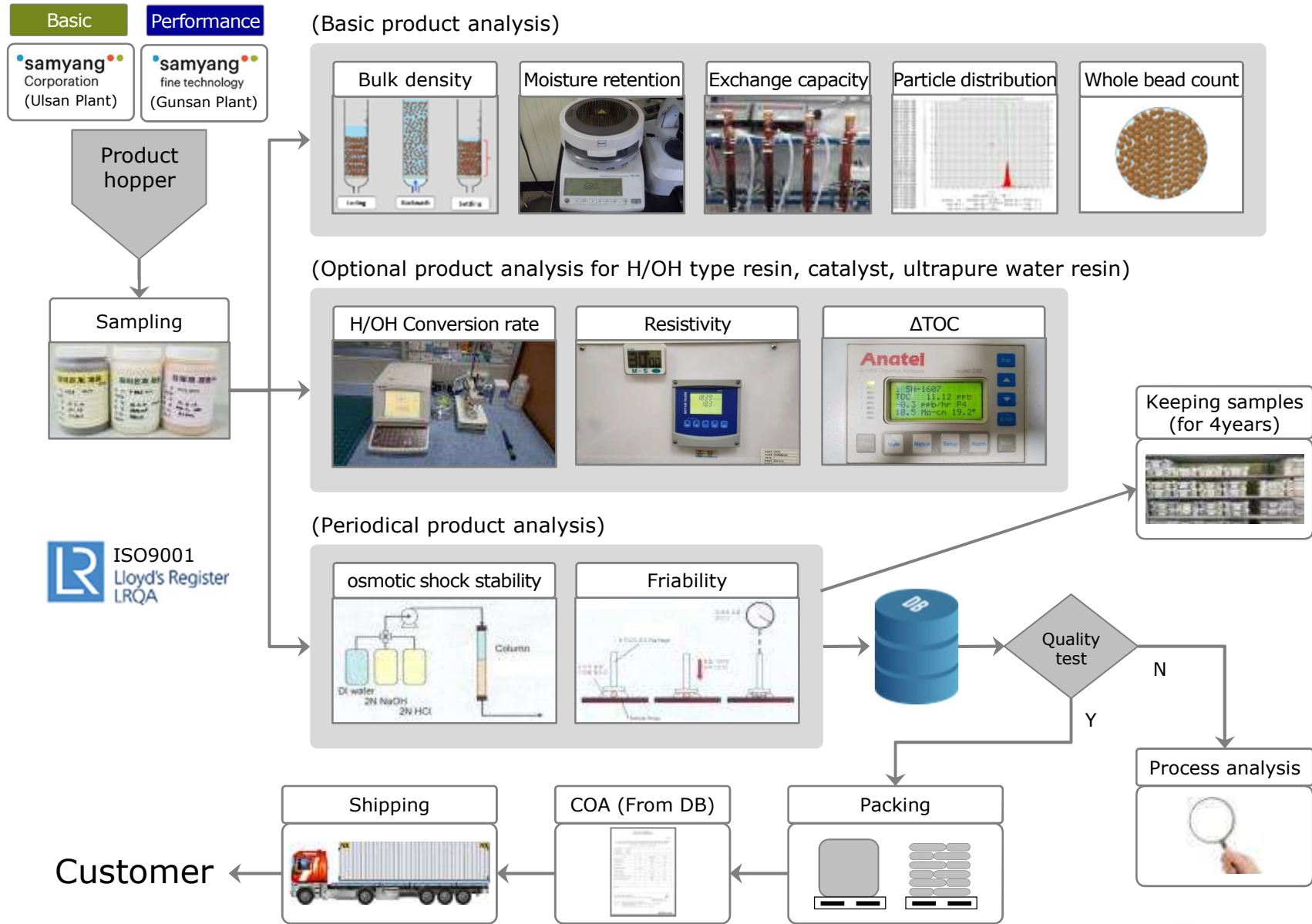
| TRILITE 삼양 트리아미르 Ion Exchange Resin | Strongly acidic cation resins (SAC) | | | | Strongly basic anion resins (SBA) | | | |
|---|-------------------------------------|------------|------------|-----------------------|-----------------------------------|------------|------------|-----------------------|
| | Type | Grade name | TEC (eq/ℓ) | Particle distribution | Type | Grade name | TEC (eq/ℓ) | Particle distribution |
| Gaussian | Cation Exchanger | SPC260EGH | 1.7 ↑ | 0.3~1.2mm | ARR | AMP16EG | 1.2 ↑ | 0.3~1.2mm |

| TRILITE 삼양 트리아미르 Ion Exchange Resin | Weakly basic anion resins (WBA) | | | |
|---|---------------------------------|------------|------------|-----------------------|
| | Type | Grade name | TEC (eq/ℓ) | Particle distribution |
| UPS | Anion Exchanger | AW90EG | 1.6 ↑ | 0.50~0.60mm |

(Typical MEG production process)



8. Product analysis / Quality control



9. Quality assurance system



Quality standard and total quality management are both necessary for any organization to become world class. The commitment to total quality operations is a way of life in Samyang.

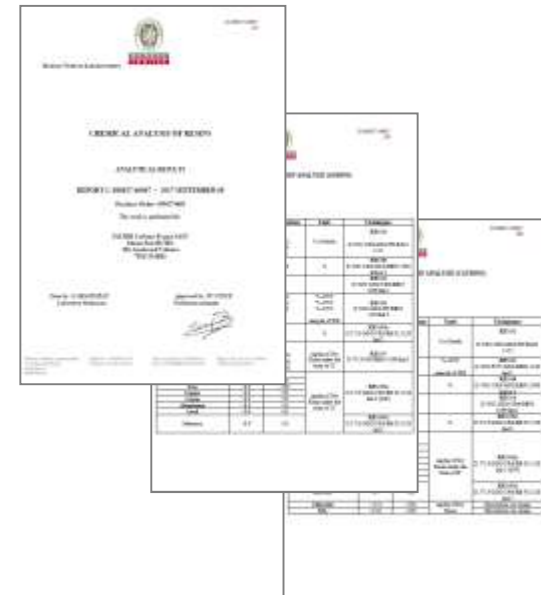
ISO9001 Certificate



HALAL Certificate



Veritas Certificate



10. Packing line, packing type



(Automatic packing line : 25ℓ PE Bag)



(Manual packing line : 1,000ℓ Bag, plastic/fiber drum)



11. Technical service

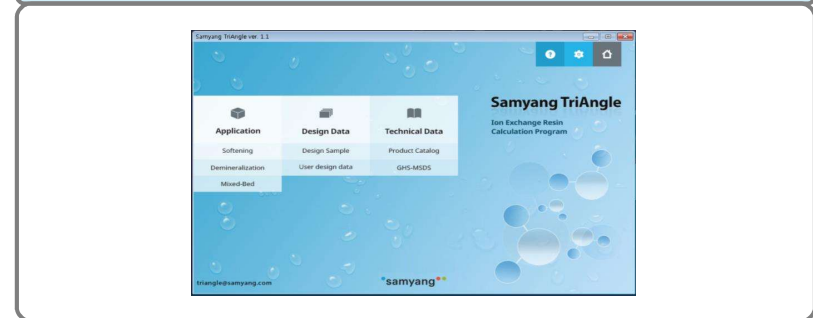
1

Ion exchange resin analysis report



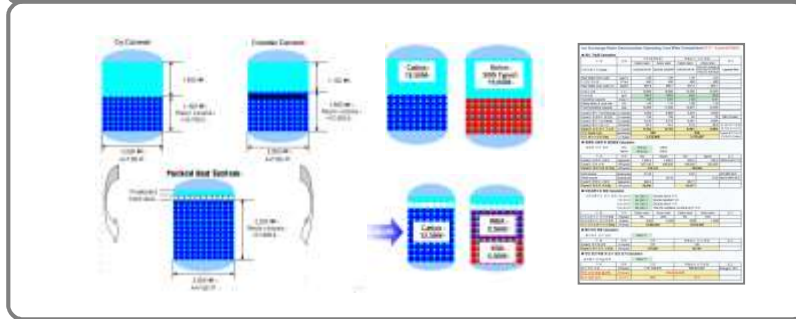
2

Ion exchange resin calculation program



3

Facilities diagnosis, retrofit proposal



4

Application process development



14. Cross reference guide



“Only 3 major companies possess UPS resin(Uniformity Coefficient 1.1↓) technology in the world”

→ ①Samyang & Mitsubishi, ②Dow, ③Lanxess

| Type | | Mitsubishi DIAION | Dupont(DOW) | | Lanxess Lewatit | Purolite | |
|---------------------|----------------------|-------------------|---------------|---------------|-----------------|------------|---------------|
| | | | Dowex | Amberjet/lite | | | |
| UPS Gel | SAC | UC 1.1 ↓ | UC 1.1 ↓ | UC 1.1 ↓ | UC 1.2 ↓ | UC 1.1 ↓ | UC 1.2 ↓ |
| | | MC-08 | UBK08 | Marathon C | 1200 | MP S100 | PFC/PPC100 |
| | | MC-08H | UBK08H | Marathon CH | 1200H | MP S100H | PFC/PPC100H |
| | | MC-10 | UBK10 | Mono 650 C | 1500 | MP S108 | SGC-650C |
| | SAC (Chromatography) | MC-10H | UBK10H | Mono 650 C H | 1500H | MP S108H | SGC-650CH |
| | | MCK series | UBK500 series | | | MDS series | |
| | SBA_Type 1 | MA-12 | UBA120 | Marathon A | 4200 CI | MP M500 | PFA/PPA400 |
| | | MA-12OH | UBA120OH | Marathon A OH | 4200 OH | MP M500 OH | PFA/PPA400 OH |
| | | MA-10 | UBA100 | Mono 550A | 4400 CI | MP M800 | SGC-550A |
| | | MA-10OH | UBA100OH | Mono 550A OH | 4400 OH | MP M800OH | SGC-550A OH |
| | | MA-15 | UBA150 | Mono 550A | 4400 CI | MP M800 | SGC-550A |
| | SBA_Type 2 | MA-15OH | UBA150OH | Mono 550A OH | 4400 OH | MP M800OH | SGC-550A OH |
| | | MA-20 | UBA200 | Marathon A2 | 4600 CI | MP M600 | PFA/PPA200 |
| UPW_Mixed Bed | UPRM100U | | | | | UCW 3600 | |
| | UPRM200U | | MR-450 UPW | UP6150 | 1292MD | UCW 3700 | |
| | UPRM300U | | MR-3 UPW | UP6040 | 1294MD | UCW 9966 | |
| UPS Porous | WBA | AW80 | Monosphere 66 | | MP64/MP68 | | |
| Gaussian Gel | | UC 1.6 ↓ | UC 1.6 ↓ | UC 1.6~1.8 ↓ | | | |
| | SAC | SCR-B(KC-08) | SK1B | HCR-S | IR120Na | C249/C267 | C100 |
| | SAC_Food grade | KH-70/KH-80 | | HCR-S/S | | | C100E |
| | SBA | SAR10(KA-10) | SA10 | SBRP | IRA400 | ASB1 | A400 |
| | | SAR11(KA-11) | SA11 | | IRA401S | | |
| | | SAR12(KA-12) | SA12 | | IRA402 | | A600 |
| | | SAR20(KA-20) | SA20 | SAR | IRA416 | ASB1 | A200 |
| Mixed Bed | SM200/210/300 | | | MB20 | NM91 | MB400 | |
| Gaussian Porous | SAC | CMP/SPC Series | PK series | | | SP120 | C150, C160 |
| | SBA | AMP Series | PA series | MSA | IRA900 OH | MP500 | A500 |
| | WAC | WCA10L | WK40/WK60L | MWC-1 | IRC86 | CNP80 | C105 |
| | WBA | AW30 | WA30 | | IRA93SP | MP62 | A100 |
| | Chelating | CLR series | CR series | | | TP207/208 | S930Puls |
| Inert resin | TR series | | IF-62 | | IN49 | IP1 | |

