

# VAE, EVAVC & EVCL Emulsion Product Catalogue

VAE, EVAVC & EVCL 乳液產品目錄



Adhesives  
接著



Paint & Coating  
塗料



Construction & Building  
建築





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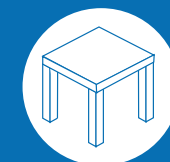
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## Company Background 公司簡介

Dairen Chemical Corporation (DCC) was established in year 1979 and it has been operated based on the business philosophy of "Integrity as the business foundation", "Customer-oriented product and service" and "Being creative and innovative". DCC is one of the members of the Chang Chun group.

DCC started producing vinyl acetate monomer in year 1983. Then, it began conducting research on the possible downstream products of vinyl acetate monomer. After five years, it had successfully commercialized the production of vinyl acetate-ethylene (VAE) emulsion via its own technology. Furthermore, in year 1996, DCC adopted spray drying technology to convert the VAE emulsion into redispersible VAE powder, which is a widely used additive in many construction applications. Over the decades, the continual research & development and quality improvement effort has made the DCC product to gain international recognition.

In year 2004, apart from VAE, DCC starts producing vinyl acetate-vinyl chloride-ethylene (EVAVC) emulsion and vinyl chloride-ethylene (EVCL) emulsion.

DCC has four manufacturing facilities worldwide which are located at Kaohsiung (Taiwan), Johor (Malaysia), Jiangsu (China) and Singapore. Besides, DCC has established three technical centers that are located at Kaohsiung (Taiwan), Johor (Malaysia), Jiangsu (China) to provide technical support to our customer. Our products have been sold globally, for instance, to China, Japan, Korea, India, Southeast Asia, Australia, America, Europe, etc. We always strive for continual improvement and innovation to provide better product and immediate service to our customer.

大連化學工業股份有限公司 (DCC) 成立於 1979 年，一直以來，秉持著誠信立業、顧客至上、創意革新為企業的經營理念。DCC 是長春集團的其中一個成員。

大連化學工業股份有限公司 1983 年開始生產醋酸乙烯酯，即進行開發下游衍生物，於 1985 年開始生產自行開發的 VAE 乳液。由於經過多年持續不斷地努力，並致力於研究開發與品質改善，使得產品在市場上大獲好評。於 1996 年開始將 VAE 乳液進行噴霧乾燥生產 VAE Powder。

2004 年起開始生產 EVAVC 及 EVCL 乳液。DCC 於世界有四處生產基地，台灣高雄大社廠、馬來西亞柔佛州廠、中國江蘇儀征廠和新加坡廠。

此外，DCC 設有三個技術服務中心，分別位於台灣高雄、馬來西亞柔佛和中國江蘇儀征，提供技術服務給予我們的顧客。銷售市場遍及世界各地，包括中國、日本、韓國、印度、東南亞、澳洲、美洲、歐洲...等等。為配合全球市場上的需求，公司走向國際化，繼續提供客戶更具競爭力的產品品質、更迅速即時的服務。



Taiwan 台灣高雄廠



Singapore 新加坡廠



Malaysia 馬來西亞廠



China 中國江蘇廠





## Background of Polymer Emulsion

Vinyl acetate-ethylene emulsion (VAE) is a milky white, non-toxic, low-odor, non-flammable/ explosive emulsion that can be transported easily. Its main functions are to increase the adhesion, flexibility, water resistance of the final product. The VAE emulsion can be applied on a wider range of substrate as compared to polyvinyl acetate. One of its noticeable applications is as the adhesive between PVC sheet and other substrates.

Besides, the VAE emulsion can be used as the adhesive of various types of plastic materials and porous substrates. Examples of plastic materials are polyvinylidene chloride, cellulose acetate, polystyrene whereas examples of porous substrates are paper, wood, woven, fiber board and polyurethane foam. Furthermore, the VAE emulsion is widely used in construction industry as the adhesion promoter and water-resistance promoter of cement admixture.

To enhance the quality of the environment, maintaining a safe and healthy living environment, to ensure sustainable development of enterprises, the company adopts environmental protection, safety and health policies, and has great commitment in improving the production and applications of the existing products, designing and developing new process and product, enhancing the value and competitiveness of the product, providing satisfactory product to customer, in order to achieve the company philosophy.

VAE emulsion is a copolymer of vinyl acetate and ethylene and it is a strong water-borne adhesive with the features of

- (1) High initial adhesion strength
- (2) Excellent heat resistance
- (3) Good water resistance
- (4) Good alkaline resistance

- (5) Good thickening response
- (6) Safe for operation

On the other hand, the vinyl acetate-vinyl chloride-ethylene (EVAVC) emulsion and vinyl chloride-ethylene (EVCL) emulsion have the features of

- (1) Fire-retardant
- (2) Excellent water resistance
- (3) Excellent solvent resistance
- (4) Self-cross-linkable

### Main applications are:

#### (1) Adhesives:

- **Furniture decoration:** Excellent heat resistance, high adhesion strength, fast setting
- **Parquet:** Fast setting, excellent heat resistance
- **Automotive industry:** Excellent heat resistance, high adhesion strength
- **Paper and packaging board:** Fast setting, excellent processing property
- **Non-woven:** Excellent anti-aging property, low formaldehyde emission
- **Woodworking:** Excellent bonding strength

#### (2) Paint and coating:

- Low odor, low volatile organic compound (VOC) emission, superior hiding power, excellent scrub resistance, good filler and additive compatibility

#### (3) Construction & Building:

- Flexible, improved water resistance

## 乳液簡介

VAE 為不含增塑劑乳白色水溶液醋酸乙烯 - 乙烯共聚物乳液，無毒、低氣味、不易燃 / 易爆，攜帶運輸方便。主要用於膠黏劑、塗料、建築和紙質加工業，具有許多優良性質；比聚醋酸乙烯乳液應用於接著材質更為廣泛。尤其適用在 PVC 皮之接著；此外亦可作為各類塑膠模與多孔性基材之接著劑，塑膠膜如聚偏氯乙烯、醋酸纖維素、聚苯乙烯，多孔性基材如紙、木材、綿布、纖維板及 PU 泡綿。亦可廣泛用於土木建材方面作為水泥接著劑之增強劑、水泥防水劑。

為全面提升環境品質，維護安全健康的生活環境，確保企業永續發展，本公司訴求環保、安全、衛生的政策，並持續致力於現有產品應用與製程改善、新製程與產品開發等，提高產品的附加價值與競爭力，提供顧客滿意的產品，以實現公司經營理念。

VAE 乳液為醋酸乙烯及乙烯之共聚物，是一種強力水性接著劑，具有多項特長

- (1) 初期接著性高
- (2) 優良耐熱潛變性
- (3) 耐水性佳
- (4) 耐鹼性佳
- (5) 增黏性高
- (6) 安全的作業性

醋酸乙烯 - 乙烯 - 氯乙烯共聚物 (EVAVC) 乳液和乙烯 - 氯乙烯共聚物 (EVCL) 乳液的特色為

- (1) 阻燃
- (2) 耐水性佳

- (3) 耐溶劑性佳
- (4) 自交聯性佳

### 主要用途：

#### (1) 接著

**傢俱裝潢：**良好的熱安定性、優良的接著強度、快速的粘結速度。

**拼花地板：**快速粘合速度、耐熱性佳。

**汽車產業：**耐熱性佳、良好的接著力。

**包裝及紙張接著：**凝結速度快、良好維持能力、良好加工性。

**無紡紙與不織布：**優良的耐老化特性、低甲醛產品。

**木工膠：**優良的接著強度。

#### (2) 塗料

低氣味、低有機揮發份、傑出遮蔽力、優良的耐刷洗性能、易於調整添加劑之組成。

#### (3) 建築

良好的彈性、良好的耐水性。





Wood adhesive  
木材接著



PVC adhesive  
PVC 接著



Paper adhesive  
紙類接著



Packaging adhesive  
包裝接著



Aluminium adhesive  
鋁箔接著



Car decorative veneer adhesive  
汽車飾板接著

Grade 規格	Stabilization system 穩定體系	Typical Properties 乳液特性						Special feature 產品特性	Application 應用領域				Grade 規格
		Solid content 固形份 (wt%)	Viscosity 黏度 (cP)	Spindle/ RPM 轉子 / 轉速	pH 酸鹼值	Tg 玻璃轉化溫度 (℃ )	MFFT 最低成膜溫度 (℃ )		General adhesive 一般接著	Cigarette adhesive 捲煙膠	Wood adhesive 木材接著	Nonwoven/ Carpet 無紡紙接著 / 地毯背膠	
Vinyl acetate-ethylene (VAE) emulsion 醋酸乙烯 - 乙烯共聚物													
DA-100	P	55.0	1100-1600	3/60	4.5-6.5	0	0	Superior bonding for a wide range of application. Provides soft and flexible film for various porous and non-porous substrates, without further additive required, and especially useful for paper and plastic packaging. 對各種多孔和非多孔基材有良好的接著，在無需添加任何助劑亦能給予柔軟和柔性膜。擁有良好的耐熱和耐水性質，特別適合用於紙張和塑料包裝接著。	○				DA-100
DA-100L	P	54.5	500-1000	3/60	4.5-6.5	0	0		○				DA-100L
DA-101	P	55.0	1500-2500	4/60	4.5-6.5	0	0		○		○	○	DA-101
DA-102	P	55.0	2500-3700	4/60	4.5-6.5	0	0		◎		○	○	DA-102
DA-102H	P	55.0	3500-4500	4/60	4.5-6.5	0	0	High viscosity version of DA-101. Suitable for difficult-to-adhere substrate surface adhesion. 性質同 DA-101，黏度較高之乳液。擁有良好的耐熱與耐水性質，適用於難貼表面基材的接著。	◎		○	○	DA-102H
DA-103	P	60.0	1500-2500	4/60	4.5-6.5	0	0	High solid content version of DA-101. Good heat and water-resistance for adhesion. 性質同 DA-101，固形份較高之乳液。擁有良好的耐熱與耐水性質，適用於接著。	○		○		DA-103
DA-103H	P	60.0	3200-4200	4/60	4.5-6.5	0	0	High solid content and viscosity version of DA-103. Good heat and water-resistance for adhesion. 性質同 DA-103，黏度較高之乳液。擁有良好的耐熱與耐水性質，適用於接著。	○		○		DA-103H
DA-103I	P	58.0	850-1050	2/6	4.0-7.0	0	0	Dispersion combines high solid content and low viscosity and allows the addition of high filler loading. Suited in carpet backing application where a medium/soft hand is required. 黏度較低之乳液。擁有良好的粉料相容性，適用於地毯背膠，手感中等。				◎	DA-103I
DA-104	P	55.0	2000-3000	4/60	4.5-6.5	-10	0	Low Tg. Flexible adhesive specifically tailored for low temperature packaging application. 低玻璃轉化溫度。柔軟性質的膠黏劑專為低溫包裝接著。	◎				DA-104
DA-105	P+S	50.0	4000-6000	4/20	4.5-6.5	0	0	Low free monomer. Suitable for adhesion of difficult substrate such as lacquered surface, foil or plastic film. Suitable for cigarette adhesive application. 低殘單。適於難貼表面基材（如漆表面、金屬箔或塑料薄膜）的接著。也適用於捲煙膠。	◎				DA-105
DA-107	P+S	65.0	1000-2500	4/60	4.5-6.5	0	0	High solid content version of DA-101. Suitable for adhesion and construction use. 性質同 DA-101，固形份較高之乳液。可用於接著與建築應用。	○				DA-107
DA-107L	P+S	65.0	500-1500	3/60	4.5-6.5	0	0	High solid content and low viscosity version of DA-101. Suitable for adhesion and construction use. 性質同 DA-101，黏度較低之乳液。擁有良好的耐熱與耐水性質，可用於接著與建築應用。	○				DA-107L

P = PVOH 聚乙烯醇, C = Cellulose derivative 纖維素, S = Surfactant 乳化劑

◎ = Highly recommended 強烈推薦, ○ = Recommended 推薦





Wood adhesive  
木材接著



PVC adhesive  
PVC 接著



Paper adhesive  
紙類接著



Packaging adhesive  
包裝接著



Aluminium adhesive  
鋁箔接著



Car decorative veneer adhesive  
汽車飾板接著

Grade 規格	Stabilization system 穩定體系	Typical Properties 乳液特性						Special feature 產品特性	Application 應用領域				Grade 規格
		Solid content 固形份 (wt%)	Viscosity 黏度 (cP)	Spindle/ RPM 轉子 / 轉速	pH 酸鹼值	Tg 玻璃轉化溫度 (℃)	MFFT 最低成膜溫度 (℃)		General adhesive 一般接著	Cigarette adhesive 捲煙膠	Wood adhesive 木材接著	Nonwoven/ Carpet 無紡紙接著 / 地毯背膠	
Vinyl acetate-ethylene (VAE) emulsion 醋酸乙烯 - 乙烯共聚物													
DA-108	P+S	72.0	1500-2500	4/60	4.5-6.5	0	0	High solid content version of DA-101. Good heat and water-resistance for adhesion. 性質同 DA-101，固形份較高之乳液。	○				DA-108
DA-108H	P+S	72.0	2500-5000	4/60	4.5-6.5	0	0	High solid content and viscosity. Good heat and water-resistance for adhesion. 性質同 DA-108，黏度較高之乳液。擁有良好的耐熱與耐水性質，適用於接著。	○				DA-108H
DA-111	P	55.0	1500-2500	4/60	4.5-6.5	14	-1	High Tg. Suitable for paper and packaging adhesion and construction use. 高玻璃轉化溫度。可用於接著與建築應用。	○				DA-111
DA-125	P+S	55.0	2500-3500	4/60	4.5-6.5	-8	0	Specifically tailored for low temperature packaging application. 適用於低溫接著。	◎				DA-125
DA-128	P+S	60.0	5000-7500	5/20	4.5-6.5	-10	0	Low Tg. Flexible adhesive specifically tailored for low temperature packaging application. 低玻璃轉化溫度。柔軟性質的膠黏劑專為低溫包裝接著。	◎				DA-128
DA-128H	P+S	60.0	7500-13000	5/20	4.5-6.5	-10	0	Low Tg. Flexible adhesive specifically tailored for low temperature packaging application. Suitable for difficult substrate surface adhesion. 低玻璃轉化溫度。柔軟性質的膠黏劑專為低溫包裝接著。擁有良好的耐熱與耐水性質，適用於難貼表面基材的接著。	◎				DA-128H
DA-140L	P	54.5	500-1000	3/60	4.5-6.5	0	0	Low free monomer, VOC and formaldehyde. Adhesive with superior bonding that is specifically formulated as cigarette adhesive. 極低殘餘單體及 VOC 無甲醛，有良好的快乾性，適用於高速捲煙紙接嘴、搭口以及包裝膠。		◎			DA-140L
DA-141	P	55.0	1500-2500	4/60	4.5-6.5	0	0			◎			DA-141
DA-142	P	55.0	2500-3700	4/60	4.5-6.5	0	0			◎			DA-142
DA-143	P	60.0	1500-2500	4/60	4.5-6.5	0	0			◎			DA-143
DA-144	P	55.0	2000-3000	4/60	4.5-6.5	-15	0			◎			DA-144
DA-146	P	55.0	1800-2700	3/20	4.5-6.5	15	2			◎			DA-146
DA-147	P+S	55.0	1800-2700	3/20	4.5-6.5	15	1			◎			DA-147
DA-161	P	55.5	1500-3000	4/60	4.8-6.0	5	0	Suitable for roller or high speed nozzle application. Good redispersibility for easy cleaning and good heat resistance. 適用於易清洗膠。	◎				DA-161

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Vinyl acetate-ethylene (VAE) emulsion 醋酸乙烯 - 乙烯共聚物														
DA-201	P	55.0	1300-2200	4/60	4.0-6.5	0	0	Provides soft and flexible film for various porous and non-porous substrates, without further additive required. Especially suited to be used in the textile industries that the product needed in white-based color. 對各種多孔和非多孔基材有良好的接著，在無需添加任何助劑亦能給予柔軟和柔性膜。擁有良好的耐熱與耐水及高溫低黃變性質，適用於接著。	○				DA-201	
DA-201E	P	55.0	2000-2800	4/20	4.0-6.0	0	0		○				DA-201E	
DA-202	P	55.0	2000-3500	4/60	4.0-6.5	0	0		○				DA-202	
DA-202E	P	55.0	3000-4000	4/20	4.0-6.0	0	0		○				DA-202E	
DA-265	C+S	65.0	1000-2000	4/60	4.5-6.5	-25	0	Low Tg. Suitable for adhesion of difficult substrate such as lacquered surface, foil or plastic film and pressure sensitive adhesive application. 低玻璃轉化溫度。適用於 PVC、紙、OPP 等基材接著。也可用於塑料層與壓敏接著劑。	◎				DA-265	
DA-265H	C+S	65.0	2000-3000	4/60	4.5-6.5	-25	0	High viscosity version of DA-265. Suitable for adhesion of difficult substrate such as lacquered surface, foil or plastic film and pressure sensitive adhesive application. 性質同 DA-265，黏度較高之乳液。低玻璃轉化溫度。適用於 PVC、紙、OPP 等基材接著。也可用於塑料層與壓敏接著劑。	◎				DA-265H	
DA-266	C+S	65.0	1000-2000	4/60	4.5-6.5	-30	0	Low Tg. Suitable for adhesion of difficult substrate such as lacquered surface, foil or plasticfilm and pressure sensitive adhesive application. 低玻璃轉化溫度。適用於 PVC、紙、OPP 等基材接著。也可用於塑料層與壓敏接著劑。	◎				DA-266	
DA-310	P+S	60.0	1000-2000	4/60	3.5-5.5	0	0	Suitable for metalized substrates adhesion application. 適用於金屬材料包裝接著。	◎				DA-310	
DA-342	S	52.0	50-500	2/60	4.0-7.0	0	0	Low formaldehyde content. Suitable used as nonwoven binders. Medium/soft hand feel. 低甲醛含量。適用於無紡紙接著與纖維處理。手感中等粗硬。				◎	DA-342	
DA-346	S	52.0	50-500	2/60	4.0-7.0	-15	0	Low formaldehyde content. Suitable used as nonwoven binders. Soft hand feel. 低甲醛含量。適用於無紡紙接著與纖維處理。手感柔軟。				◎	DA-346	
DA-500	P+S	54.5	500-1000	3/60	4.5-6.5	0	0	Suitable for high speed packaging, good heat and water resistance. 擁有良好的耐熱與耐水性質，適用於高速包裝接著。	○			◎	DA-500	
DA-502	P+S	54.5	3000-4000	4/60	4.5-6.5	0	0	Good heat and water resistance, especially suitable for general adhesive application. 擁有良好的耐熱與耐水性質，適用於一般接著。	○				DA-502	
DA-511	P	55.0	1500-2500	4/60	4.5-6.5	15	2	High Tg, suitable for high speed packaging, excellent mechanical stability and fast setting speed. 高玻璃轉化溫度，擁有良好的耐熱、耐水、機械穩定性與快乾燥速率性質。適用於高速包裝接著。	◎		○		DA-511	
DA-524	P	55.0	1500-2500	4/60	4.5-6.5	20	3	High Tg, suitable for general adhesive, good heat resistance and good water sensitivity. 高玻璃磚化溫度，擁有良好的耐熱與水溶性性質。適用於一般接著。	○		◎		DA-524	

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Wood adhesive  
木材接著



PVC adhesive  
PVC 接著



Paper adhesive  
紙類接著



Packaging adhesive  
紙類接著



Aluminium adhesive  
鋁箔接著



Car decorative veneer adhesive  
汽車飾板接著

Grade 規格	Stabilization system 穩定體系	Typical Properties 乳液特性						Special feature 產品特性	Application 應用領域				Grade 規格
		Solid content 固形份 (wt%)	Viscosity 黏度 (cP)	Spindle/ RPM 轉子 / 轉速	pH 酸鹼值	Tg 玻璃轉化溫度 (°C)	MFFT 最低成膜溫度 (°C)		General adhesive 一般接著	Cigarette adhesive 捲煙膠	Wood adhesive 木材接著	Nonwoven/ Carpet 無紡紙接著 / 地毯背膠	

Vinyl acetate-ethylene (VAE) emulsion 醋酸乙烯 - 乙烯共聚物

DA-652	P	55.5	1500-20000	4/30	4.0-7.0	0	0	Good heat and water resistance. 擁有良好的耐熱與耐水性質。	◎				DA-652
DA-691	P+S	54.5	100-500	2/60	5.0-7.5	0	0	Good heat and water resistance, especially suitable for D4 grade woodworking adhesive. 擁有良好的耐熱與水溶性性質。適用於木工。適用於集成材用雙組份木工膠，可達歐洲標準 EN204 D4 級。	○		◎		DA-691

Ethylene-vinyl acetate-vinyl chloride (EVAVC) emulsion 醋酸乙烯 - 乙烯 - 氯乙烯共聚物

DA-901	P	50.0	1000-3000	3/60	5.0-7.0	0	0	General adhesive with fire-retardant property, good bonding strength as D4 grade woodworking adhesive. 具防火性質的一般接著劑。適用於集成材用雙組份木工膠，可達歐洲標準 EN204 D4 級。	○		◎		DA-901
DA-903	C+S	50.0	10-200	2/60	5.0-7.0	20	30	Self-crosslinkable emulsion with fire-retardant property. Suitable for textile, non-woven and carpet backing applications. 具防火性質的自交聯接著劑。適用於紡織、無紡紙的接著與地毯背膠。				◎	DA-903
DA-905	C+S	50.0	10-100	2/60	5.0-7.0	30	40	General adhesive with fire-retardant property, extensive use in textile applications, excellent bonding strength as D4 grade woodworking adhesive. 具防火性質的一般接著劑。適用於紡織的接著與纖維處理。適用於集成材用雙組份木工膠，可達歐洲標準 EN204 D4 級。			◎	◎	DA-905
DA-908	P	50.0	200-1200	3/60	4.5-6.5	25	30	General adhesive with fire-retardant property, excellent bonding strength as D4 grade woodworking adhesive. 具防火性質的一般接著劑。適用於集成材用雙組份木工膠，可達歐洲標準 EN204 D4 級。	○		◎	○	DA-908

Ethylene-vinyl chloride (EVCL) emulsion 乙烯 - 氯乙烯共聚物

DA-910	S	50.0	1-50	1/60	6.0-8.0	0	0	Low Tg, self-crosslinkable emulsion with fire-retardant property. Suitable for non-woven and carpet backing applications. 低玻璃轉化溫度。具防火性質的自交聯接著劑。適用於無紡紙的接著、纖維處理與地毯背膠。可應用於汽車內襯接著。				◎	DA-910
DA-930	S	50.0	1-50	1/60	7.0-8.0	30	40	High Tg, self-crosslinkable emulsion with fire-retardant property. Suitable for non-woven and carpet backing applications. 高玻璃轉化溫度。具防火性質的自交聯接著劑。適用於無紡紙的接著、纖維處理與地毯背膠。可應用於汽車內襯接著。				◎	DA-930

P = PVOH 聚乙烯醇, C = Cellulose derivative 纖維素, S = Surfactant 乳化劑

◎ = Highly recommended 強烈推薦, ○ = Recommended 推薦



### Water-based paint —Towards a greener and more sustainable society

The increased society awareness on safer and healthier painting working environment has shifted the use of solvent-based paint to water-based paint because the former emits relatively high concentration of volatile organic compounds (VOC) during the paint drying process.

For water-based interior paint, it is essential to achieve even lower VOC emission because good indoor air ventilation is not always guaranteed. The presence of high VOC concentration is often related to the detection of strong unpleasant smell, which is a nuisance to the users. Besides, long-term exposure to high VOC concentration may pose a threat to the health of the painters and residents.

### DCC VAE emulsion - Your solution to good paint performance and low VOC emission

The most common sources of VOC in conventional water-based interior paint are coalescing agent and solvent. Removing these additives from paint formulation can reduce the VOC emission, but this will adversely affect the paint performance, for instance, leading to poor scrub resistance.

To resolve this conflict, Dairen Chemical Corporation (DCC) has developed a series of vinyl acetate-ethylene (VAE) emulsion that can help the paint formulator to attain a trade-off between good paint performance and low VOC emission.

### Features of DCC VAE emulsion

Our APEO-free VAE emulsion has a minimum film forming temperature of 0°C. This permits good film formation at ambient temperature without the addition of coalescing agent.

Furthermore, the glass transition temperature of our VAE emulsion is in a range of 6-13°C, thus providing good scrub resistance to the paint.

Using our VAE emulsion to formulate paint can potentially reduce the dosage of titanium dioxide due to the inherent good hiding power of the VAE film.

It is proven that the commercial paint formulated from our VAE emulsion gives very low VOC emission.

### 水性塗料—邁向更環保，更可持續發展的社會

基於安全和健康的考量，現今社會傾向於使用水性塗料，因為溶劑型塗料在乾燥過程中會釋放出相對更高濃度的揮發性有機化合物（VOC）。

用於室內的水性塗料應該釋放更加低的 VOC 因為不是每一個室內都擁有良好的通風系統。高 VOC 濃度往往會導致難聞氣味的形成，進而造成漆匠的工作困擾。此外，長期暴露於高 VOC 濃度中可能對漆匠和居民的健康構成威脅。

### 大連化工 VAE 乳液 - 讓您兼具良好的塗料性能和低 VOC 釋放

基本上，成膜助劑和溶劑是常規水性內牆塗料裡的 VOC 來源。雖然將這些添加劑從塗料配方中除去可以降低 VOC 的釋放量，但是卻會對塗料的性能產生不利的影響，例如，導致塗料的耐刷洗性能變差。

要解決這個矛盾，大連化學工業（DCC）開發了一系列醋酸乙烯-乙烯共聚物乳液（VAE），可以幫助塗料配方設計師在優越的塗料性能和低 VOC 釋放之間取得一個良好的平衡。

### 大連化工 VAE 乳液的特色

大連的 VAE 乳液不含 APEO。此外，乳液的最低成膜溫度為 0°C，在不加入成膜助劑的情況下，也能達到良好的成膜效果。

大連的 VAE 乳液的玻璃化轉變溫度是 6-13°C，使得塗料具備良好的耐刷洗性能。通過使用大連的 VAE 乳液，可以減少塗料配方中二氧化鈦的添加量，因為大連 VAE 幹膜擁有良好的遮蔽力。分析顯示採用大連 VAE 乳液製成的水性塗料所釋放的 VOC 量相當的低。

### Benefits of using DCC VAE emulsion to formulate paint

- 1) APEO-free emulsion.
- 2) Good scrub resistance.
- 3) Low VOC emission.
- 4) Reduce titanium dioxide dosage.
- 5) Good film formation without the addition of coalescing agent.



### 使用 VAE 乳液水性內牆塗料的優點

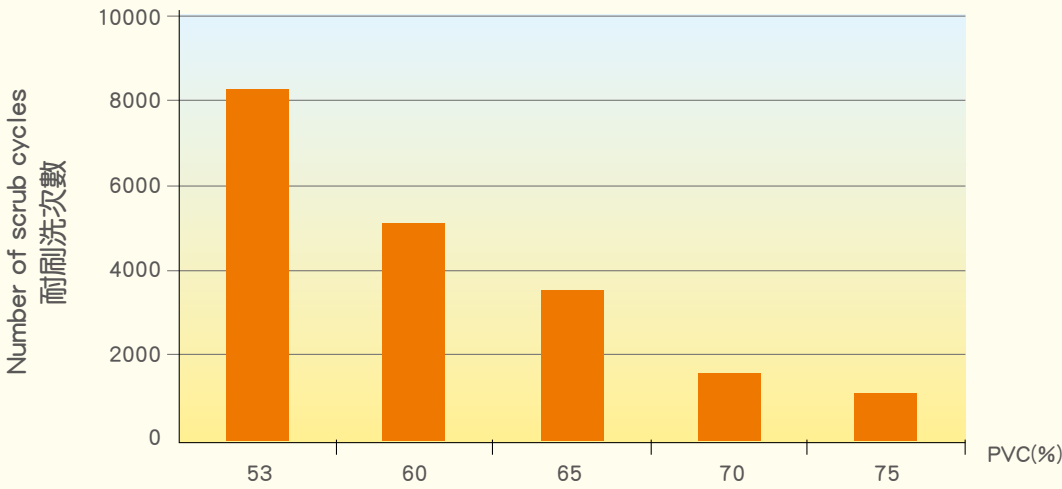
- 1) 乳液不含 APEO
- 2) 耐刷洗性能佳
- 3) 低 VOC 釋放
- 4) 降低二氧化鈦的添加量
- 5) 無需添加成膜助劑也能達到良好的成膜效果



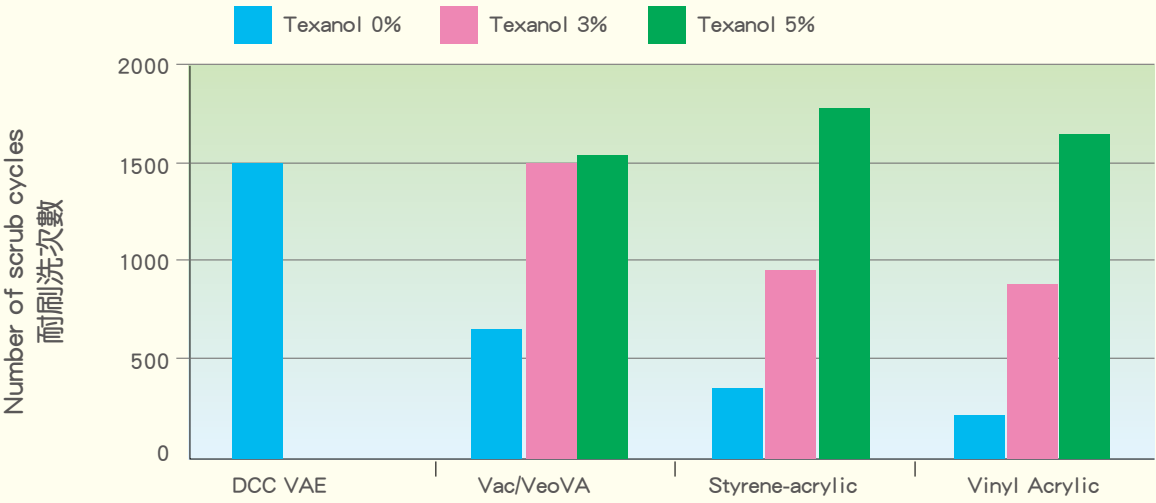
Choices of DCC VAE emulsion for water-based interior paint  
適用於水性內牆塗料的大連化學工業 VAE 乳液

Grade 規格	Stabilization system 穩定體系	Typical properties 乳液特性						Recommended pigment volume concentration of water-based interior paint 建議使用於水性內牆 塗料之顏料體積濃度		
		Solid content 固形份 (wt%)	Viscosity 黏度 (cP)	Spindle/ RPM 轉子 / 轉速	pH 酸鹼值	Tg 玻璃 轉化溫度 (°C)	MFFT 最低 成膜溫度 (°C)	High 高	Medium 中	Low 低
DA-371	P+S	55.0	500-1500	3/60	4.5-6.5	10	0	◎		
DA-381	P+S	55.0	100-1000	2/20	4.5-6.5	10	0		◎	
DA-382	P+S	55.0	100-700	2/20	4.0-6.5	8	0	◎		◎
DA-391	S	55.0	100-700	2/20	4.0-6.0	8	0	◎		◎

P = Protective colloid 保護膠體, S = Surfactant 乳化劑



Paint formulated from DCC VAE emulsion shows excellent scrub resistance even at high PVC.  
大連 VAE 乳液所製成的塗料在高 PVC 配方中依然擁有良好的耐刷洗性能。



DCC VAE emulsion provides paint with good scrub resistance without the need of adding coalescing agent.  
大連 VAE 乳液在無需添加成膜助劑的情況下也能賦予塗料優越的耐刷洗性能。





Dairen Chemical Corporation (DCC) produces a variety of vinyl acetate-ethylene (VAE) emulsion that can be used in different construction applications such as primer, cement admixture, two-component cementitious waterproofing membrane, two-component cementitious tile adhesive and joint compound. Following are the benefits of using DCC VAE emulsion to formulate

Primer

- Reduce water permeation to base substrate
- Enhance the adhesion strength of mortar applied on base substrate

Cement admixture

- Increase the adhesion strength of mortar

Two-component cementitious waterproofing membrane (CWM)

- Improve the flexibility of CWM
- Enhance the waterproofing effect of CWM
- Can be applied on various type of substrate

Two-component cementitious tile adhesive

- Improve the adhesion strength of tile adhesive

Joint compound

- High filler loading capacity
- Improve the flexibility of joint compound

大連化學工業（DCC）生產的醋酸乙烯 - 乙烯共聚物乳液（VAE）適用於不同的建築應用領域，例如吸水調整材、砂漿添加劑、雙組份防水漿料、雙組份瓷磚粘結劑和填縫材。使用 DCC VAE 乳液的優點為

吸水調整材

- 減少水滲透基材
- 增加砂漿粘結於基材的強度

砂漿添加劑

- 加強砂漿的粘結強度

雙組份防水漿料

- 提升防水漿料的柔軟度
- 防水性佳
- 可以塗佈於不同種類的基材表面

雙組份瓷磚粘結劑

- 提高粘結強度

填縫材

- 填料相容性佳
- 提升填縫材的柔軟度

Choices of DCC VAE emulsion for construction application  
適用於建築業的大連化學工業 VAE 乳液

Grade 規格	Stabilization system 穩定體系	Typical properties 乳液特性						Application 應用領域				
		Solid content 固形份 (wt%)	Viscosity 黏度 (cP)	Spindle/ RPM 轉子 / 轉速	pH 酸鹼值	Tg 玻璃轉化 溫度 (℃)	MFFT 最低 成膜溫度 (℃)	Primer 吸水調 整材	Cement admixture 砂漿添 加劑	Water- proofing (2K) 防水漿料 (雙組份)	Tile adhesive (2K) 瓷磚粘 結劑	Joint compound 填縫材
DA-117	C+S	65.0	500-1500	3/60	4.5-6.5	0	0	◎	◎	◎		◎
DA-125	P+S	55.0	2500-3500	4/60	4.5-6.5	-8	0			◎		
DA-180L	P+S	54.5	500-1000	3/60	4.5-6.5	0	0		◎	◎	◎	
DA-183	P+S	55.0	1500-2500	4/60	4.5-6.5	0	0			◎		
DA-187	P+S	55.0	200-2000	3/60	4.0-6.0	3	0	◎	◎	◎		

P = PVOH, C = Cellulose derivative, S = Surfactant

P = 聚乙烯醇, C = 纖維素, S = 乳化劑



In general, VAE emulsion is considered safe for its intended use. However, as this class of products always contains a minor amount of residual vinyl acetate monomers (less than 0.1%), adequate ventilation is recommended in rooms whenever VAE emulsion is handled. Generally when working with VAE emulsions, protective clothes, gloves and also goggles should be used. Splashes of VAE emulsion on the skin or into the eyes should immediately be removed by irrigation with clean water.

VAE emulsion should be stored in sheltered areas at temperatures between 5 and 40°C; do never store under freezing conditions. Soft lumps or skins may tend to be formed during transportation and storage. Thus, filtration is recommended before use. Adequate precautionary measures are needed if the VAE emulsion is not fully transferred at once to prevent the possible formation of lumps and skins. Opened containers should be closed soon to prevent skinning.

Ensure the cleanliness of equipment and facilities that are used to transfer the VAE emulsion that kept in original containers to other tanks. Additional preservative is required to prevent microbial attack. Shelf life of VAE emulsion is minimum 6 months, provided the product is stored in original, unopened containers under proper conditions. Stirring is required before utilizing the VAE emulsion if it has been stored for a long time. Finished products compounded from VAE polymer emulsions usually also require preservation.

Comprehensive instructions of safety notes are provided in the product corresponding technical data sheet (TDS) and safety data sheet (SDS) which are available on Dairen official website ([www.dcc.com.tw](http://www.dcc.com.tw)) or upon request from Dairen sales officers.

一般而言，VAE 乳液使用上被認定很安全，但這些產品含少量的殘存醋酸乙烯單體（少於 0.1%），建議使用 VAE 乳液時處於通風的空間，並且應該穿著防護措施，因 VAE 乳液是一種微酸之產品，操作人員應佩戴手套與護目鏡，若 VAE 乳液噴濺至皮膚或眼睛，需以大量之清水沖洗。

VAE 乳液應該儲存在 5°C～40°C 的陰涼環境中，避免低溫冷凍存放。乳液在儲存或運輸過程中可能形成結皮或軟結塊。因此，我們推薦在使用之前先對其進行過濾。未使用完的產品應使用後應立即旋緊產品包裝蓋，避免產生結皮或軟結塊現象。

乳液轉移或者分裝過程中所使用的儲槽和運輸管道系統應保持充分的清潔。為避免乳液遭受微生物污染，則必須額外添加防腐劑。在適當的儲存環境下，VAE 乳液在未開封的原裝容器中的保質期為 6 個月。產品長時間儲存後，使用前需攪拌均勻。使用 VAE 乳液製成的成品通常也需要進行必要的防腐措施。

詳細的安全信息可向大連銷售代表索取或者登陸大連網站 ([www.dcc.com.tw](http://www.dcc.com.tw)) 下載產品技術資料表 (TDS) 和物質安全數據表 (SDS)。







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