



# POLYFLOC SERIES FLOCCULANT

## WHAT IS POLYFLOC SERIES FLOCCULANTS?

Flocculant is water soluble synthetic polymer used as a tool to facilitate the **separation of materials** in suspension of aqueous media. It comes in varying families of products of natural or synthetic origin.

Our flocculants also help to **dewater sludge** from various separation processes. The separation process will occur rapidly when there is difference in density between the liquid medium and the particle itself.

Our POLYFLOC series flocculants are **effective in a wide pH and temperature** range without the needs for pH adjustment.



## POLYFLOC SERIES PRODUCTS RANGE

POLYFLOC CATIONIC POWDER TYPE SERIES

POLYFLOC ANIONIC POWDER TYPE SERIES

POLYFLOC CATIONIC LIQUID TYPE SERIES

POLYFLOC CATIONIC OIL/WATER EMULSION AND DISPERSION TYPE SERIES



BIODEGRADABLE



ENHANCES PLY BOND  
STRENGTH



COST SAVING



ACT AS DECOLORANT



HEAVY METAL FREE



FOOD INDUSTRY  
FRIENDLY

# POLYFLOC SERIES

## FLOCULLANT FOR DRINKING WATER & WASTEWATER TREATMENT

### POLYFLOC SERIES FLOCCULANTS

Flocculants, also commonly known as coagulant aids, are commonly used alongside with coagulants to enhance settling, assist in dewatering, promote adhesion and more. Supported with technical sales team, we source, supply and provide technical support on a wide range of flocculants to suit every industrial need.

### POLYFLOC CATIONIC SERIES

#### Powder Type

PolyFloc KP9250	PolyFloc KP9255	PolyFloc KP9850	PolyFloc KP9855
PolyFloc KP9330	PolyFloc KP9335	PolyFloc KP9000	PolyFloc KP9005
PolyFloc KP9970	PolyFloc KP9975	PolyFloc KP9010	PolyFloc KP9015
PolyFloc KP9550			

#### Liquid Type

PolyFloc K740	PolyFloc K730	PolyFloc K705	PolyFloc K530
PolyFloc K500			

#### Oil/Water Emulsion and Dispersion Type

PolyFloc KM660	PolyFloc KM640	PolyFloc KM620	PolyFloc KM600
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### POLYFLOC ANIONIC SERIES

#### Powder Type

AP8017



Figure 1: POLYFLOC Flocculant Series

# POLYFLOC SERIES

## POWDER TYPE CATIONIC AND ANIONIC FLOCCULANTS

### POLYFLOC IN POWDER FORM PRODUCT SPECIFICATIONS

Polymer	KP9000	KP9005	KP9010	KP9015	KP9250	KP9255	KP9330	KP9335	KP9550	KP9850	KP9855	KP9970	KP9975	AP8017
Charge Density	Very Low	Very Low	Very Low	Low	Low	Medium	Medium	Medium	Medium	High	High	High	High	Medium
Molecular Weight	High	High	High	High	High	High	High	High	High	High	High	High	High	Very High
Mesh Size	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max	2 max 6 max
Approximate bulk density	0.80	0.80	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.70	0.68	0.80
Recommended operating concentration (g/L)	5	5	4	4	4	4	4	4	4	4	4	4	4	3
Maximum operating concentration (g/L)	10	10	10	10	10	10	10	10	10	10	10	10	10	5
Dissolution time in DI water @ 5 g/L @ 25°C (minutes)	120	120	90	90	90	60	60	60	60	60	60	60	60	60
Stability of DI water solution (days)	1	1	1	1	1	1	1	1	1	1	1	1	1	1

LEGEND: ■ CATIONIC ■ ANIONIC

### Dry Powders

Monomers are polymerized in a gel form. The gel obtained is then ground and dried. The main advantage of these products is the 100% activity.

### Characteristics

- Available in powder form and need to be dissolved with water
- Storage temperature (°C) is between 0 – 35
- 24 months of shelf life
- 25 kg per bag

# POLYFLOC SERIES

## LIQUID TYPE CATIONIC FLOCCULANTS

### POLYFLOC IN LIQUID FORM PRODUCT SPECIFICATIONS

POLYMER	K500	K530	K705	K730	K740
Charge Density	Very High	Very High	Very High	Very High	Very High
Specific gravity	1.14	1.22	1.14	1.14	1.20
pH	6.5	6.5	6.5	5.0	5.0
Non volatile solids (%)	50	73	50	50	65
Freezing point (°C)	< -3	< -3	< -3	< -3	< -3

LEGEND:  CATIONIC  ANIONIC

### Liquid Solutions

Monomers are polymerized at low concentration in aqueous solution. The main advantage with these products is the simplicity of use.

### Characteristics

- Storage temperature (°C) is between 0 – 35
- 24 months of shelf life
- 25 kg in plastic pails
- 1100 kg in IBC tote bin
- 22 – 24 t in flexicontainer

# POLYFLOC SERIES

## OIL/WATER EMULSION & DISPERSION TYPE CATIONIC FLOCCULANTS

### POLYFLOC FOR OIL/WATER EMULSION & DISPERSION TYPE PRODUCT SPECIFICATIONS

POLYMER	KM660	KM640	KM620	KM600
Charge Density	Medium	High	High	High
Molecular Weight	High	High	High	High
Approximate bulk density	1.03	1.03	1.03	1.03
Average non volatile solids (%)	42	44	45	47
Approximate viscosity of a 5 g/L active content (cps)	1200	1300	1300	1300
Maximum operating concentration (g/L)	10	10	10	10
Stability of DI water solution (days)	1	1	1	1

LEGEND:  CATIONIC  ANIONIC

### Liquid Emulsions

Monomers are emulsified in a solvent and then polymerized. At the end of polymerization, a surfactant is added (also called as inverter or breaker) that makes the emulsion polymer readily to dilute in water. The main advantages of these products are their liquid form (ease of use) and increased performance on certain substrates due to their possible variations in specific molecular structure.

### Characteristics

- Storage temperature (°C) is between 0 – 35
- 6 months of shelf life
- 25 kg in plastic pails
- 1050 kg in IBC
- 22 – 24 t in flexicontainer

# APPLICATION



## CONSTRUCTION COMPACT SKID WATER TREATMENT

### INTRODUCTION

Construction works such tunnel drilling, piling works and workers quarters require water treatment. The limited space and mobility of the treatment system need to be taken into consideration due to site requirement. We able to design, build and operate the compact skid treatment system base on site requirements.



# APPLICATION



## APPLICATION OF POLYFLOC K 730

### POLYFLOC K 730

It is a retention aids to improve drainage and retention of fine particles. They function as both productivity aids and product improvement since they increase the speed and fines retention. They improve the clarity of the waste water generated and greatly reduce the negative environmental impact by water reuse.

### Characteristics

**POLYFLOC K 730** improve the retention.

1. It improves good retention of fibre, fine and filler over a wide pH range (from acidic paper to alkaline paper).
2. They improve productivity by enhancing drainage in the forming section and this can also improve drying.



### Benefits

- It enhances ply bond strength / compressing strength.
- Very easy to use due to low viscosity and liquid material.
- Reduces pitch and stickies deposits.
- Easy to rework both within the process and after end use.



# APPLICATION

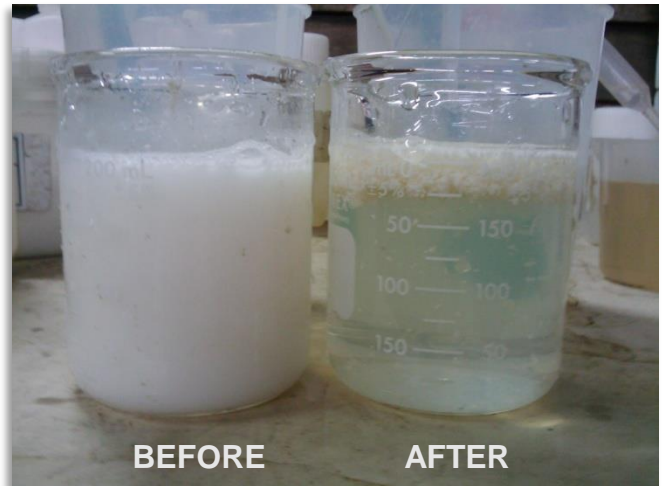


## APPLICATION OF POLYVINYL AMIDINE (PVAD)

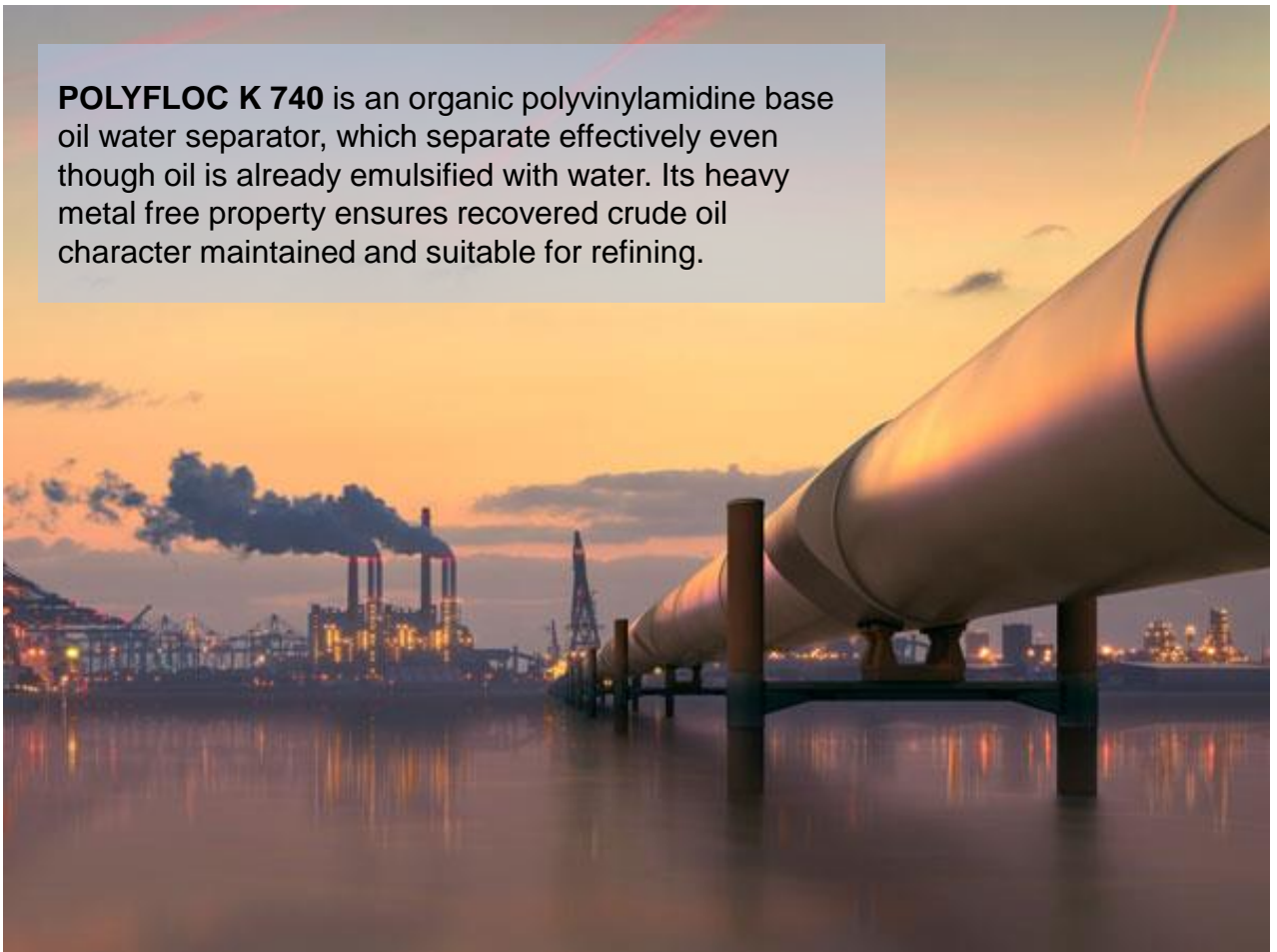
### POLYFLOC K 740

POLYFLOC K 740 is an organic polyvinylamidine flocculant to separate oil from water, even though the oil already emulsified with water.

In crude oil and fuel oil production industry, emulsifier is used for oil lifting from oil well, and demulsifier is used for oil recovery. However, emulsifier is expensive with poor performance. Other heavy metal base coagulant will deteriorate the recovered oil property and reduce its recover value.



**POLYFLOC K 740** is an organic polyvinylamidine base oil water separator, which separate effectively even though oil is already emulsified with water. Its heavy metal free property ensures recovered crude oil character maintained and suitable for refining.





# APPLICATION



## APPLICATION OF POLYVINYL AMIDINE (PVAD)

### POLYFLOC K 705

**POLYFLOC K 705** is an organic polyvinylamidine coagulant for synthetic polyester industries wastewater treatment

Before  
Application



After  
Application



Synthetic polyester refinery produces very high COD discharge. Sometimes, even though after combination of anaerobic-aerobic biological treatment, the treated COD is still above the standard discharge limit. Conventional tertiary treatment such as Fenton process requires complicated multiple poisonous chemical use and produces huge volume of toxic schedule waste.

POLYFLOC K 705 is a single chemical to total replace entire tertiary treatment process, such as Fenton, membrane or carbon polishing. It results better treated water quality and 10 times lower total treatment cost.

# APPLICATION

## APPLICATION OF POLYVINYL AMIDINE (PVAD)

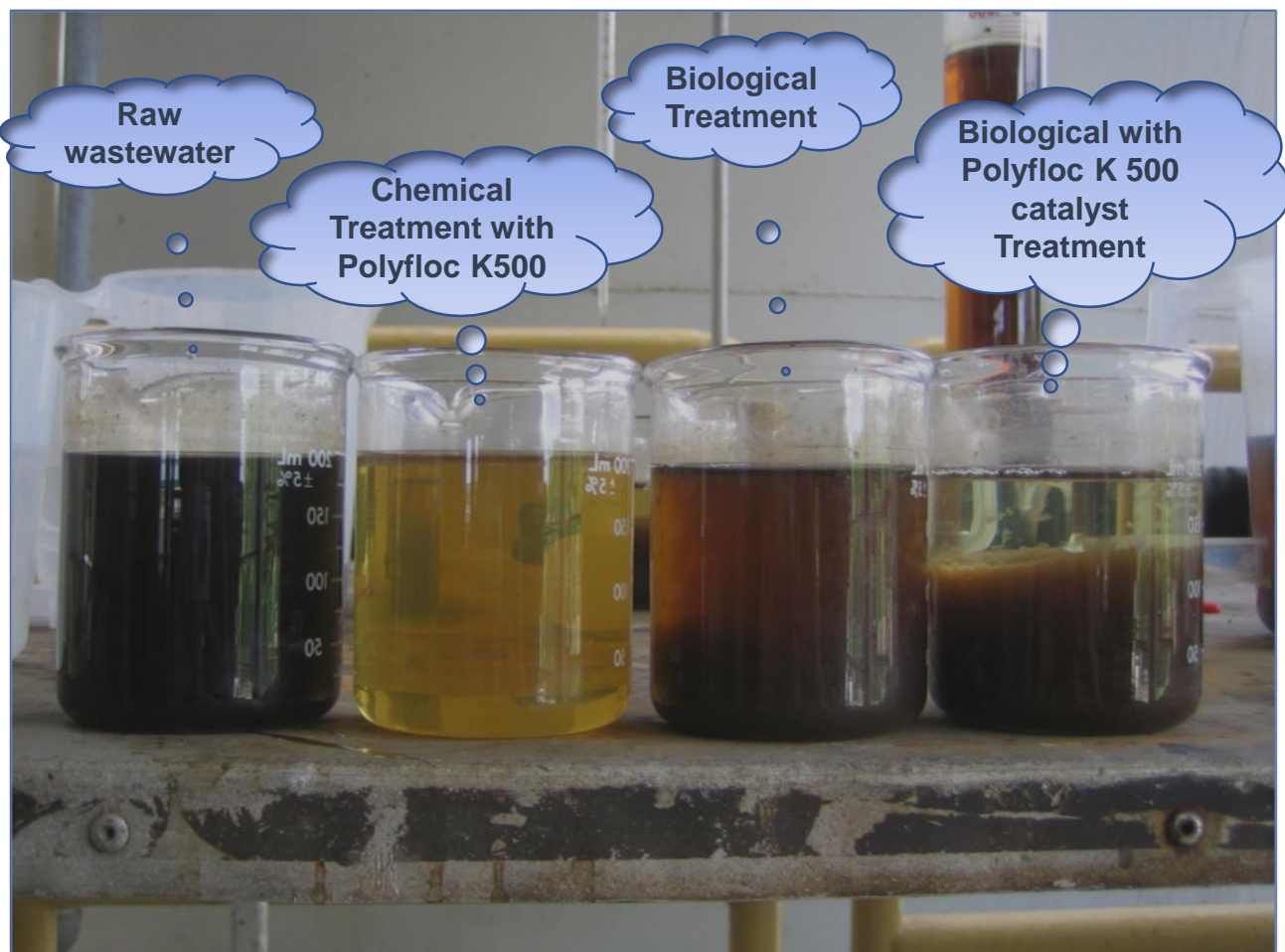
### POLYFLOC K 500

POLYFLOC K 500 is an organic polyvinylamide catalyst which function as decolorant and COD removal for organic colour industries wastewater treatment



In food Industry, such as coffee, sugar, cooking oil, beverage, its effluent contains high organic colorant, which unable to be fully degraded and digested by biological treatment. Color index is still above standard at the final discharge, and further pollutes the river.

POLYFLOC K 500 is an organic polyvinylamide catalyst which functions as decolorant and COD removal for organic colour industries wastewater treatment. Its high amidine charge is functioned to degrade the organic dye lignin base color, and ensures the color, COD, BOD and other related parameters comply to standard discharge limit.



# APPLICATION

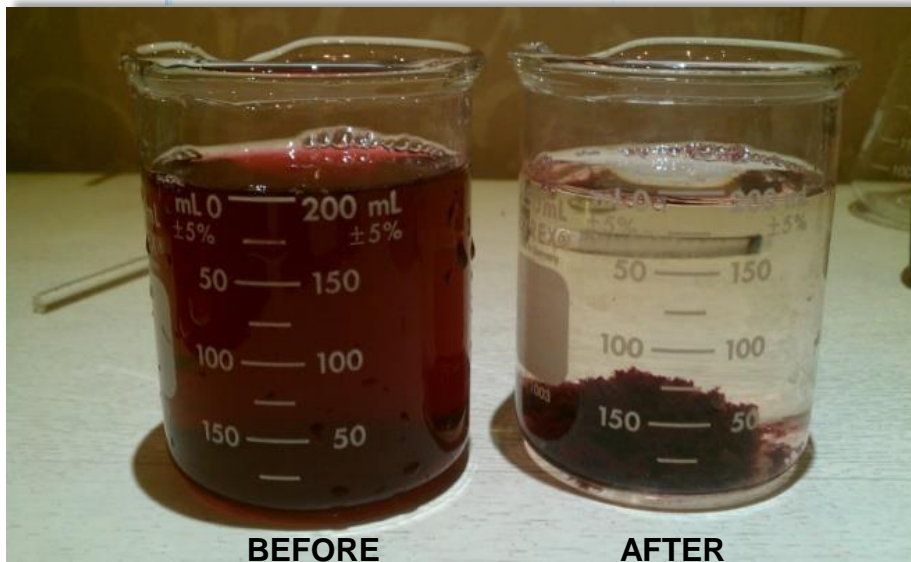
## APPLICATION OF POLYFLOC K530

### POLYFLOC K 530

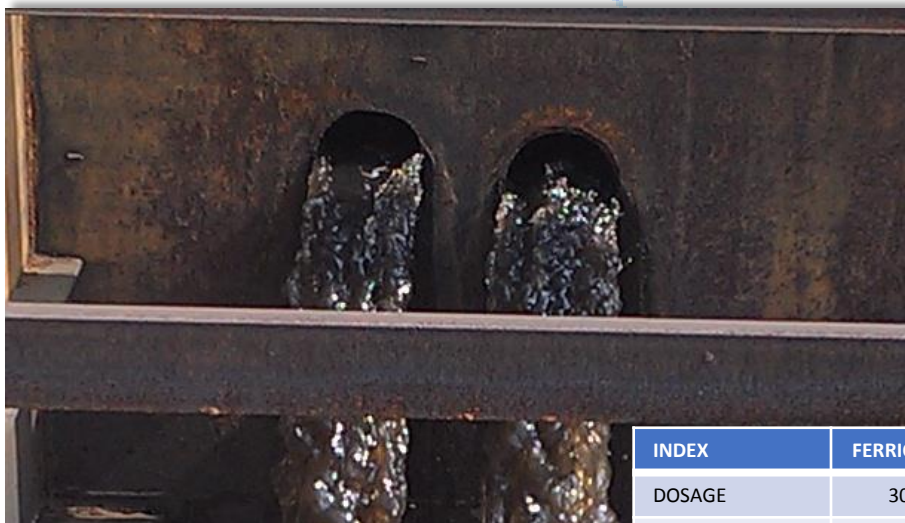


### INTRODUCTION

Coloured wastewater generated from textile and dyeing industry contains about 2% of pure dye stuff colour, which greatly increases COD and colour contained in the wastewater. Conventional coagulant and flocculant treatment for treating coloured wastewater have little effect on COD and colour index removal, due to colour dye stuff is highly soluble in water.



**POLYFLOC K 530** is a new innovative coagulant which able to react with dye stuff to achieve 80% - 95% COD and colour removals at the same time. Its low dosage requirement also enable to generate only 10% sludge weight from conventional ferric chloride, which greatly reduce in treatment cost.



HIGH EFFICIENCY  
LOW TREATMENT  
COST

INDEX	FERRIC CHLORIDE	POLYFLOC K 530
DOSAGE	3000ppm	200ppm
COD REMOVAL	20%-30%	80%-95%
SLUDGE	3kg/mt wastewater	0.2kg/mt wastewater



## DIA-Chemical Sdn Bhd

### OUR PRODUCTS

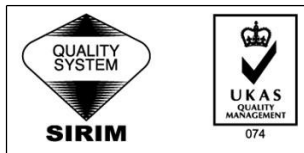
- DIACHLOR™ SERIES COAGULANTS
- POLYFLOC SERIES FLOCCULANTS
- OTHER SPECIALTY CHEMICALS
  - EMULSION BREAKER EL-1000
  - AMMONIA REMOVAL AMRemove-1000
  - BIOGAS BOOST 1000

### OUR SERVICES

- JAR TEST ANALYSIS
- BIOMETHANE POTENTIAL MEASUREMENT
- WATER & WASTEWATER ANALYSIS
- ENGINEERING SERVICES
- TURNKEY PROJECT FOR TREATMENT PLANTS
- EPCC FOR TREATMENT PLANTS

*For more details, please visit us at [www.dia-chemical.com](http://www.dia-chemical.com)*

### CERTIFIED BY



CERTIFIED TO ISO 9001:2015  
CERT. NO.: QMS 03673



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