Technical Data Sheet

Chemflake Special

Product description

This is a glass flake reinforced vinyl ester coating. It is an ultra high build, extremely chemical resistant and fast curing barrier coating. Can be used as primer, mid coat or finish coat in atmospheric and immersed environments. Suitable for properly prepared carbon steel, stainless steel and concrete substrates.

Typical use

Specially designed as an internal lining for offshore, onshore and buried tanks and pipes such as chemical tanks, flue gas ducts, cooling towers, funnels, pipes, waste water, grey water, concrete bund, pressure vessels. Specially suitable in acidic conditions. Refer to Protective Product Resistance List. Recommended for areas subject to extreme chemical exposure and mechanical wear and where future maintenance is challenging.

Colours

red, white

Product data

Property	Test/Standard	Description
Solids by volume	ISO 3233	92 ± 2 %
Solids by weight	ISO 3233	98 ± 2 %
Gloss level (GU 60 °)	ISO 2813	semi gloss (35-70)
Flash point	ISO 3679 Method 1	34 °C
Density	calculated	1.2 kg/l

Region	Regulation	Test Standard *	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	US EPA Method 24	41 g/l
EU	European Paint Directive 2004/42/CE	US EPA method 24	41 g/l
EU IED	Industrial Emission Directive 2010/75/EU	Calculated	10 g/l
EU IED	Industrial Emission Directive 2010/75/EU	ISO 3233	20 g/l
Korea	Korea Clean Air Conservation Act	KS M ISO 11890-1	126 g/l
China	GB 30981-2020 Limit of harmful substances of industrial protective coatings	GB/T 34682-2017 8.3	13 g/l

The provided data is typical for factory produced products, subject to slight variation depending on colour.

Gloss description: According to Jotun Performance Coatings' definition.

* VOC information: Theoretically and under ideal conditions vinyl ester products cure without any evaporation of reactive monomers or other components. This means that what is applied on a surface also remains within the coating after curing. Practically, a certain evaporation of monomer (styrene) during the application and curing process may occur.
The theoretical VOC-content value in accordance with the Industrial Emission Directive 2010/75/EU is 10 g/L based on the theory that all the reactive monomer is reacted into the matrix.
VOC measurement can best be done for this type of product by following test standard ISO 3233. The VOC-content at 23 degrees is found to be 20 g/L at a wet film thickness of 750 µm and with 2 wt% peroxide, 1,5

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wt% Accelerator 9802 and 0,5 wt% Accelerator 9826.

Film thickness per coat

Typical recommended specification range

Dry film thickness	600	-	1000	µm
Wet film thickness	650	-	1080	µm
Theoretical spreading rate	1.6	-	0.9	m²/l

All vinyl ester and polyester resin systems are subject to some shrinkage during the curing process. This results in a practical spreading rate lower than the theoretically calculated. The shrinkage depends on actual dry film thickness applied and conditions during application.

Surface preparation

Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Carbon steel	Sa 2½ (ISO 8501-1) with a surface profile Medium to Coarse G (ISO 8503-2)	Sa 2½ (ISO 8501-1) with a surface profile Medium to Coarse G (ISO 8503-2)
Concrete	Dry abrasive blast cleaning to SSPC-SP 13/NACE No. 6.	Minimum 4 weeks curing. Moisture content maximum 5 %. Dry abrasive blast cleaning to SSPC-SP 13/NACE No. 6.
Stainless steel	Sa 2½ (ISO 8501-1) with a surface profile Medium to Coarse G (ISO 8503-2)	Sa 2½ (ISO 8501-1) with a surface profile Medium to Coarse G (ISO 8503-2)

Application

Application methods

The product can be applied by

Spray:	Standard airless spray may be used. Dedicated two component airless spray is an option.
Brush:	Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness.

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Mixing ratio table - Additives

The steel temperature shall not be lower than the paint temperature and not more than 20 °C above the paint temperature.

Additive volumes (ml) in 16 litres product.
Due to local regulations, local variants in pack size and filled volume may exist. Note that the amount of additives must be adjusted accordingly.

	Paint temperature						
Additive	5-9 °C	10-14 °C	15-19 °C	20-24 °C	25-29 °C	30-34 °C	35-40 °C
Jotun Accelerator CO1P or Accelerator 9802 P			400	300	300	200	200
Jotun Accelerator DMA10 or Accelerator 9826			100	100	100	100	100
Jotun Peroxide 1, Norox KP-9, Akperox A50 or Butanox M-50			400	400	300	300	300
Jotun Inhibitor 53							30
Jotun Accelerator CO1P	600	400					
Jotun Accelerator DMPT100	150	150					
Peroxide 24 or Norox CHM-50	500	400					

Note: 5-9 °C and 10-14 °C - Applicable for selected markets only.

For other additive suppliers please consult Jotun.

Mixing the additives sequence:
Mix the 16 litres base to a homogenous consistency.
Ensure the accelerators (Jotun Accelerator CO1P and Jotun Accelerator DMA10) are shaken and uniform before adding according to the mixing table and mixing in, one at the time. Add inhibitor (Jotun Inhibitor 53) if required.
Stir well with power tool mixer for at least 1 minute.
The last additive, the peroxide (Jotun Peroxide 1), to be added only when everything is ready to start spraying.

WARNING:
Accelerators must never come in direct contact with peroxides.
All peroxides must be stored in a dark and cool storage room (below 25 °C), and kept away from all kind of combustible materials. Exposure to direct sunlight must be avoided. Use only original or approved containers. Empty containers should be washed with water and kept in separate storage/containers.
The peroxide may catch fire if exposed to sparks or to hot metal dust from grinding or other mechanical work. The curing reaction develops heat. For leftovers of mixed paint it is recommended to fill the tin with water to avoid excessive heat development.

Thinner/Cleaning solvent

Thinner: Styrene

Thinning max.: 5 %

Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.
Note: Korean VOC regulation "Korea Clean Air Conservation Act" and its corresponding thinning limit will prevail over recommended thinning volumes.

Cleaning solvent: Jotun Thinner No. 17 / Jotun Thinner No. 23 / Jotun Thinner No. 27

When thinners are used as a cleaning solvent, the use must be in accordance with prevailing local regulations.

Guiding data for airless spray

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Nozzle tip (inch/1000):	27-35
Pressure at nozzle (minimum):	150 bar/2100 psi

Drying and Curing time

Substrate temperature	5 °C *	10 °C *	15 °C	23 °C	40 °C
Surface (touch) dry	6 h	4 h	8 h	4 h	2 h
Walk-on-dry	6 h	4 h	8 h	4 h	2 h
Dry to over coat, minimum	6 h	4 h	8 h	4 h	2 h
Dry to over coat, maximum, immersed	48 h	48 h	36 h	24 h	12 h
Dried/cured for service	14 d	10 d	8 d	4 d	2 d

For maximum overcoating intervals, refer to the Application Guide (AG) for this product.

Drying and curing times are determined under controlled temperatures and relative humidity below 85 %, and at average of the DFT range for the product.

* Applicable for selected markets only.

Surface (touch) dry: The state of drying when slight pressure with a finger does not leave an imprint or reveal tackiness.

Walk-on-dry: Minimum time before the coating can tolerate normal foot traffic without permanent marks, imprints or other physical damage.

Dry to over coat, minimum: The recommended shortest time before the next coat can be applied.

Dry to over coat, maximum, immersed: The longest time allowed before the next coat can be applied.

Dried/cured for service: Minimum time before the coating can be permanently exposed to the intended environment/medium.

Paint temperature	23 °C
Pot life	35 min

Heat resistance

	Temperature	
	Continuous	Peak
Dry, atmospheric	160 °C	180 °C
Immersed, sea water	85 °C	90 °C

Further resistance information can be found in Protective Product Resistance List available on Jotun's website, or contact your local Jotun office.

Peak temperature duration max. 1 hour.

The temperatures listed relate to retention of protective properties. Aesthetic properties may suffer at these temperatures.

Note that the coating will be resistant to various immersion temperatures depending on the specific chemical and whether immersion is constant or intermittent. Heat resistance is influenced by the total coating system. If used as part of a system, ensure all coatings in the system have similar heat resistance.

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Product compatibility

Depending on the actual exposure of the coating system, various primers and topcoats can be used in combination with this product. Some examples are shown below. Contact Jotun for specific system recommendation.

Previous coat: vinyl ester

Subsequent coat: vinyl ester

Tankguard Holding Primer can be used as a temporary protection and is fully compatible with the tank coating system.

Packaging (typical)

	Volume (litres)	Size of containers (litres)
Chemflake Special	16	20

The volume stated is for factory made colours. Note that local variants in pack size and filled volumes can vary due to local regulations.

Storage

The product must be stored in accordance with national regulations. Keep the containers in a dry, shaded, cool, well-ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

Storage temperature not to exceed 25 °C.

Shelf life at 23 °C

Chemflake Special 4 month(s)

In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

Caution

This product is for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to Jotun's technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to the responsible Jotun representative for approval before commencing the work.

Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not inhale spray mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

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Colour variation

When applicable, products primarily meant for use as primers or antifoulings may have slight colour variations from batch to batch. Such products and epoxy based products used as a finish coat may chalk when exposed to sunlight and weathering.

Colour and gloss retention on topcoats/finish coats may vary depending on type of colour, exposure environment such as temperature, UV intensity etc., application quality and generic type of paint. Contact your local Jotun office for further information.

Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.

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