

Technical Data Sheet

Version March 2010

Doka-OptiX

Release agent for concrete

Product Overview

Product description:	Doka-OptiX is a thin liquid release agent for concrete delivered in ready-to-use form. Doka-OptiX is an emulsion of vegetable oil derivatives in water.
Special properties:	Doka-OptiX is particularly well suited for use on lightly and non absorbent formwork facing surfaces. Doka-OptiX is unproblematic to use and readily biodegradable in the soil.
Anwendungsgebiete:	Release agent for concrete for uses on wood, plastic and steel facings. Ideal for on-site concrete applications that have to meet high concrete surface quality standards.

Technical Data

Form/color/odor:	Liquid/white/faint	
Boiling point:	Approx. 100 °C	
Setting point:	Approx. - 5 °C	
Density:	Approx. 0.97 kg/l	
Ignition point:	Not combustible	
Consumption:	Non-absorbent steel and plastic facing	Approx. 25 ml/m ²
	Wood facing	Approx. 50 ml/m ²

Recommendations for Use

Preparing the surface:	Make sure facing is dry and clean. Remove old concrete residue. Remove rust from steel facings.
Handling:	Doka-OptiX is delivered in ready-to-use condition. Do not add anything. Preferably apply by spraying the product. Apply an even thin layer. Do not wipe off. As long as the sprayed on layer has a milky consistency, it must be protected from rain.
Processing temperature:	Can be sprayed at temperatures as low as approx. -4 °C

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Waiting time:	As the water in the blend evaporates, the emulsion breaks and is converted from a milky liquid into a firm transparent film. The facing can subsequently used for concrete rendering. Protect facing against contamination if waiting times are prolonged.
Cleaning the device:	The substance can be washed off with water as long as it is in a white liquid condition. Once the emulsion has been broken, use standard grease solvents to clean it off.
Storage:	Store in original packaging, tightly closed at temperatures of no less than -4 °C. Storage class 12 (FRG)
Shelf life:	About 12 months

Hazard information and safety recommendations:	No special hazards. Not classified as hazardous for the processor/handler.
Transportation:	Doka-OptiX is not classified as a dangerous product.
Disposal:	Dispose product residue with an authorized waste collection service. Waste code number 12503 pursuant to ÖNORM S 2100. European waste catalog: 13 08 02 Recycle completely empty packaging material.
Measures to take in the event of an accident:	Pick up with a liquid binding material. Prevent liquid from entering bodies of water. Water hazard class (WGK): 1 minor hazard for water

1. Chemical product and company identification

Commercial name application	Doka-Optix Concrete mould release agent
Company	Ecoratio bv Industrieweg 161 3044 AS Rotterdam, Nederlande Telephone: +31 88 22 44 440 Telefax: +31 88 22 44 444 Email: info@ecoratio.com Internet www.ecoratio.com E-Mail: lisette.v.d.riet@ecoratio.com
Emergency Telephone	+31 88 22 44 440

2. Hazards identification

Health risks	None identified
Safety risks	None identified
Environmental risks	None identified

3. Composition/ information on ingredients

Chemical characteristics	Emulsion of vegetable oil derivatives in water		
Hazardous components	weight-%	CAS-Nr	classification
Ethanol	ca 5	64-17-5	F, R11

4. First aid measures

	Direct effects	Action necessary
Inhalation	None	-
Skin contact	None	wash with water and soap
Eye contact	None	rinse with plenty of water
Ingestion	Nausea	Rinse mouth with water and drink plenty of water. If a large quantity is swallowed or if symptoms are developed, obtain immediate medical attention

5. Fire fighting measures

Extinguishing media	Water (mist), foam, dry powder, carbon dioxide
Unsuitable extinguishing media	None
Specific hazards	None
Special protective equipment	None

6. Accidental release measures

Personal protection	No special precautions necessary
Environmental precautions	No special precautions necessary
Clean-up procedure	Absorb spillage onto inert material (e.g. sand) and collect into suitable marked containers. Residues and small spillages may be washed away with water and detergent

7. Handling and storage

Handling	No special precautions necessary
Storage	Store in original closed containers not under -4 °C and out of direct sunlight. Avoid extremes of temperature.
Unsuitable materials	Galvanised steel and zinc

8. Exposure controls/personal protection

General precautions	No special precautions necessary
Exposure limits at the work station	No limits
Respiratory protection	No special precautions necessary
Hand protection	No special precautions necessary
Eye protection	No special precautions necessary
Skin protection	Normal work clothes

9. Physical data and chemical properties

Form/Colour/Odour	Liquid/White/Faint
Boiling point	Appr. 100 °C
Solidification point	Appr. -5 °C
Flash point (COC)	Non flammable (water based product)
Explosive/Oxidising properties	Not expected
Density (15 °C)	Appr. 970 kg/m ³
pH (20 °C)	8,6 +/- 0,5
Dynamic viscosity (20 °C) (ASTM D 2983)	5.040 mPas

10. Stability and reactivity

Stability	Stable under normal conditions
Conditions to be avoided	None known
Materials to be avoided	None known
Hazardous reaction products	Not expected

11. Toxicological information

LD ₅₀ oral, rat	>2 g/kg
LD ₅₀ dermal, rat	>2 g/kg
LC ₅₀ (4h) inhalation, rat	>3.15 g/m ³
Skin and eye irritation, rabbit	Non irritant
Skin sensitivity, guinea pig	Sensitivity did not occur

12. Ecological information

Biodegradability	Readily biodegradable (OECD 301 B)
96h-LC ₅₀ , fish	≥100 mg/l
48h-LC ₅₀ , Daphnia magna	≥100 mg/l
EC ₅₀ , microbes (Ps putida)	>100 mg/l

13. Disposal considerations

Waste disposal procedure	Disposal in accordance to administrative Regulations
Contaminated packaging	Observe local and legal requirements

14. Transport information

Not classified in	RID/ADR/DOT - ADNR - IMDG – ICAO/IATA – DGR
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15. Regulatory information

EU classification	Not dangerous within the meaning of directive 67/548/EEG
Water pollutant class	WGK: 1 (acc. To VwVwS of 17.05.99)
Hazard warning symbol	Not classed as hazardous to operators
R-phases	None
S-phases	None

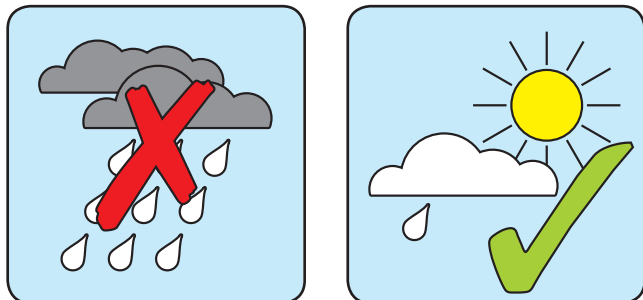
16. Other information

Full text of the R-clause mentioned in Chapter 3	R 11, flammable
Printing date: 11.02.2010	Version: 200912

The information contained in this note makes use of our current knowledge. However, we cannot accept responsibility or liability for any consequences resulting from its use.

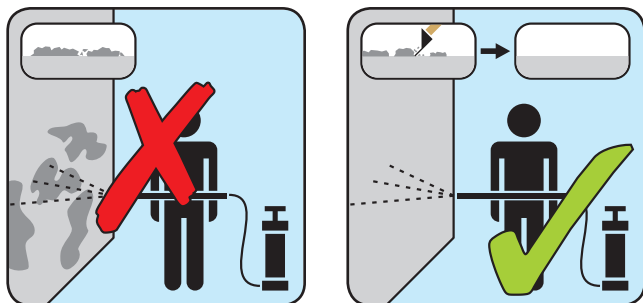
Brief instructions for use, Doka-OptiX

1. Do not apply release agent in the rain!



- Do not apply Doka-OptiX in the rain.
- Doka-OptiX can be applied when drizzle is falling if the formwork is dry.
- The spray-applied coat of release agent becomes rainproof when Doka-OptiX has de-aerated (i.e. when its colour has changed from white to transparent).

3. Spray only on to clean, dry formwork!



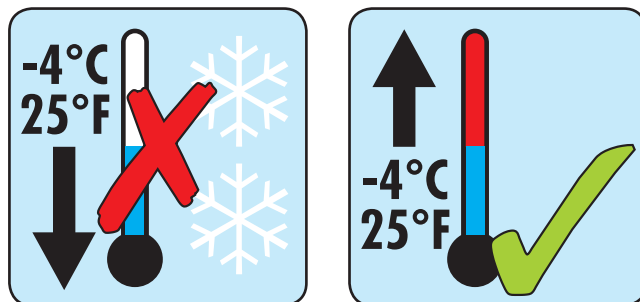
- Before spray-applying Doka-OptiX, remove all traces of foreign matter and concrete residues from the formwork.
- Make sure that the surface of the formwork is dry before you apply Doka-OptiX.

5. Do not apply too much release agent - no runs!



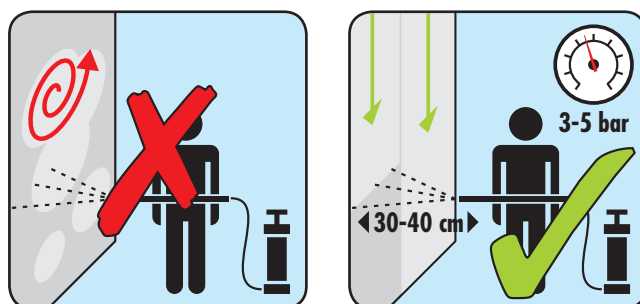
- Keep the spray mist as thin and uniform as possible throughout application. Apply as liberally as necessary and as sparingly as possible. Absorbent formwork sheeting has to be coated more liberally with release agent.
- Do not allow the release agent to run or streak. Applying a thin coat to the formwork when it is flat on the ground is a good way of preventing the release agent from running.

2. Do not use at ambient temperatures $\leq -4^{\circ}\text{C} / 25^{\circ}\text{F}$!



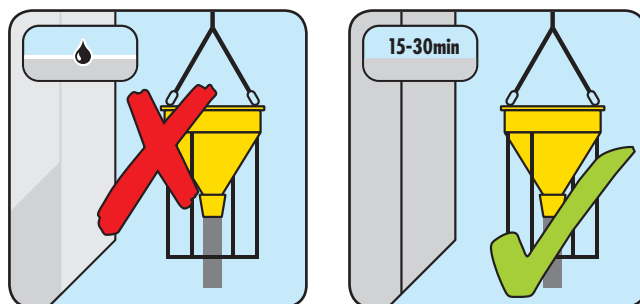
- Use Doka-OptiX only at temperatures higher than $-4^{\circ}\text{C} / 25^{\circ}\text{F}$. Doka-OptiX cannot de-aerate if the emulsion freezes after being sprayed on to the surface.
- On site in cold conditions, always keep the container inside a heated site hut.

4. Spray on a uniformly thin coating pass by pass!



- Apply Doka-OptiX with a Doka release-agent spray applicator fitted with a flat-spray nozzle, working at a pressure of 3-5 bar and maintaining a distance of 30-40 cm between the nozzle and the formwork sheeting.
- Apply Doka-OptiX uniformly, advancing in regular passes. Make sure that the film of release agent is thin and uniform.
- No need to wipe after application or to wipe off excess release agent.
- Go back and respray areas that remain dry after the initial application.
- After spraying on release agent, protect the formwork against foreign matter.

6. Wait for the Doka-OptiX film to turn transparent before concreting!



- Do not start concreting until the film of release agent has lost its whiteness and can no longer be seen. This de-aeration process generally takes 15 - 30 minutes to complete.
- De-aeration can take longer when relative humidity is high.