

FLUXA®

Inspection Media for Magnetic Particle Testing

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KARL DEUTSCH

FLUXA®
Inspection Media for Magnetic Particle Testing



UV-light fluorescent

- **dry**
  - **powder**
    - **DEUTROFLUX POWDER**

FINE	COARSE
article no. 9031	article no. 9030
yellow-green	yellow-green
particle size 80-220 µm	particle size 100-300 µm

    - **air**
- **wet**
  - **ready-to-use**
    - **FLUXA SUSPENSION**

HS-O	HS-O	HRS	HS-O-110
article no. 9314.2	article no. 9314.9	article no. 9306.9	article no. 9315.2
yellow-green	yellow-green	yellow-green	yellow-green
particle size 3 µm	particle size 3 µm	particle size 3 µm	particle size 3 µm
ready-to-use in oil	ready-to-use in oil spray can	ready-to-use in water spray can	ready-to-use in oil

    - **water**
  - **concentrates ready medium high**
    - **FLUXA CONCENTRATE**

FR	HRS	HRS/G	HRS/special	HVP
article no. 9006	article no. 9306	article no. 9356	article no. 9306.22	article no. 9357
yellow-green	yellow-green	yellow-green	yellow-green	yellow-green
particle size 7 µm	particle size 3 µm	particle size 3 µm	particle size 3 µm	particle size 3 µm
mixture ratio 1:20 - 1:40	mixture ratio 1:20 - 1:40	mixture ratio 1:20 - 1:40 spec. rust prev.	mixture ratio 1:20 - 1:40	mixture ratio 1:40 - 1:80

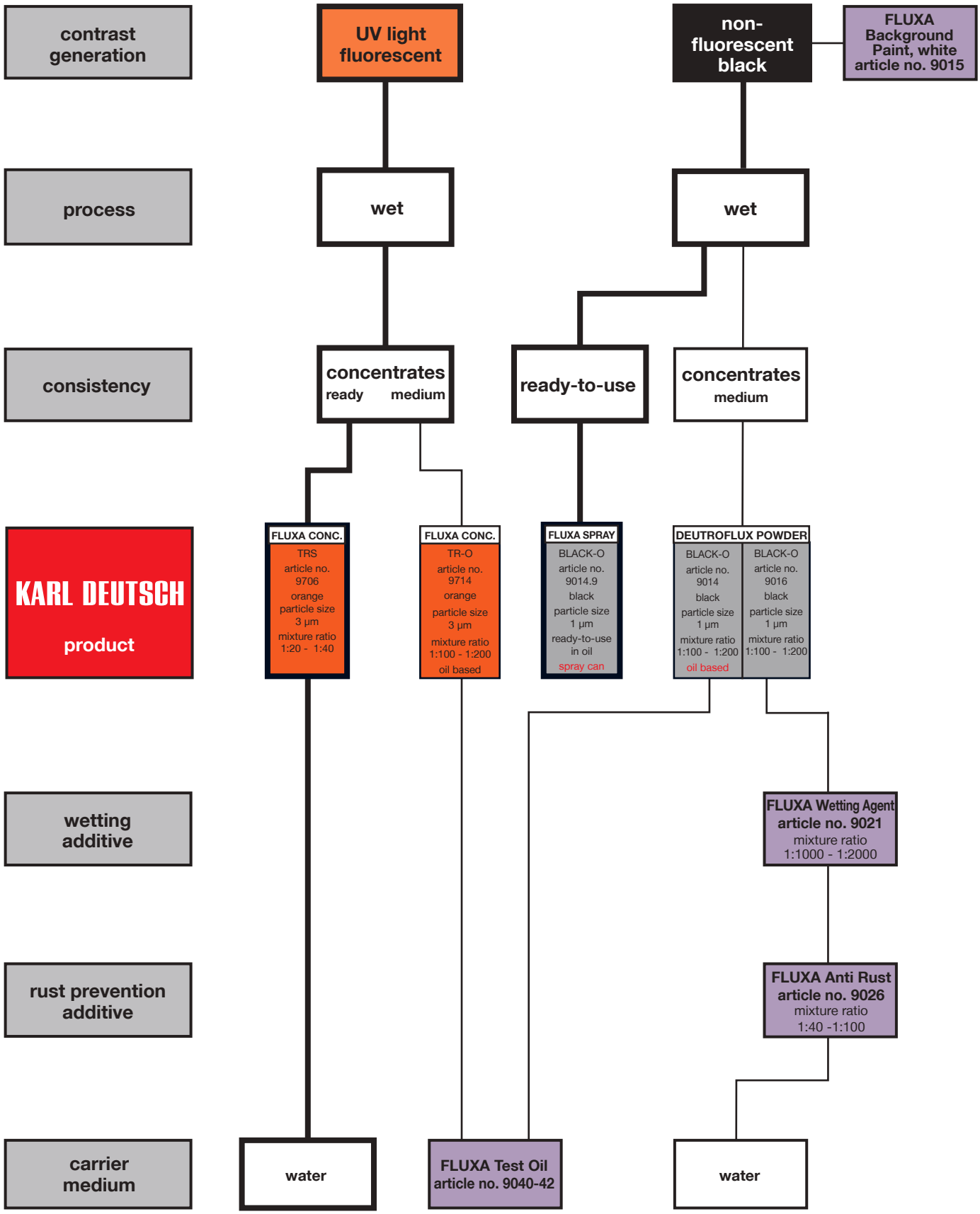
    - **water**
    - **FLUXA CONCENTRATE**

HGK	HKS	HS-O
article no. 9360	article no. 9366	article no. 9314.1
yellow-green	yellow-green	yellow-green
particle size 3 µm	particle size 3 µm	particle size 3 µm
mixture ratio 1:60 - 1:100	mixture ratio 1:100 - 1:200	mixture ratio 1:100 - 1:200 oil based

    - **FLUXA Test Oil article no. 9040-42**
    - **water**
  - **powder**
    - **FLUXA POWDER**

F	FS
article no. 9001	article no. 9101
yellow-green	yellow-green
particle size 7 µm	particle size 3 µm
mixture ratio 0.25-0.5 g/l	mixture ratio 0.25-0.5 g/l

    - **FLUXA Wetting Agent article no. 9021** mixture ratio 1:1000 - 1:2000
    - **FLUXA Anti Rust article no. 9026** mixture ratio 1:40 -1:100
    - **FLUXA Test Oil article no. 9040-42**


contrast generation
UV light fluorescent
non-fluorescent black
FLUXA Background Paint, white article no. 9015
process
wet
wet
consistency
concentrates
ready medium
ready-to-use
concentrates
medium
KARL DEUTSCH
product
FLUXA CONC.
TRS
article no. 9706
orange
particle size 3 µm
mixture ratio 1:20 - 1:40
FLUXA CONC.
TR-O
article no. 9714
orange
particle size 3 µm
mixture ratio 1:100 - 1:200
oil based
FLUXA SPRAY
BLACK-O
article no. 9014.9
black
particle size 1 µm
ready-to-use in oil
spray can
DEUTROFLUX POWDER
BLACK-O
article no. 9014
black
particle size 1 µm
mixture ratio 1:100 - 1:200
oil based
BLACK-O
article no. 9016
black
particle size 1 µm
mixture ratio 1:100 - 1:200
wetting additive
FLUXA Wetting Agent article no. 9021
mixture ratio 1:1000 - 1:2000
rust prevention additive
FLUXA Anti Rust article no. 9026
mixture ratio 1:40 -1:100
carrier medium
water
FLUXA Test Oil article no. 9040-42
water

FLUXA®
Five Reasons for Its Use in Nondestructive Testing

1. Uniform Sensitivity

When using FLUXA® ready concentrates, a constant indication sensitivity of the inspection bath is attained. Mainly, this has two reasons:

- The inspection media is produced under controlled conditions.
- The application properties of the final product are unambiguously defined and documented in the individual acceptance reports delivered with each batch, containing measured values including acceptable tolerances. The users influence on the quality of the suspension is relatively low, since the ready-to-use concentrate only has to be diluted with water.

2. Long Life Time of the Inspection Bath

In series testing, a uniform sensitivity of the freshly prepared bath of inspection media alone is not sufficient. For a reproducibility of testing results, the indication sensitivity has to remain constant for a time period as long as possible. Besides the dragout of the magnetic particles by the specimen, the life time is mainly determined by the resistance of the testing agent to the mechanical load caused by the permanent pump-over in the circulation of the bath. Even after 100 hours of circulation, FLUXA® magnetic particle testing agents present the same indication sensitivity as after 5 minutes. Prior to delivery this is checked for each batch and documented in the acceptance report.

3. Well-Approved in Daily Practice

For many years, we have been delivering our FLUXA® magnetic particle testing agents to the automotive industry and its suppliers such as forges and foundries. FLUXA® products always receive top scores in supplier evaluations.

4. Solutions for Special Applications

Due to the long-time experience of KARL DEUTSCH in research and production of inspection media, it is likly that the wide range of FLUXA® products already offers a solution for your testing problem. However, if a special inspection medium should be necessary, we will be able to solve your test task with an optimized magnetic particle testing agent that matches your requirements.

5. Excellent Price-Preformance Ratio

A technically perfect solution at a reasonable price: Try it in your testing system and convince yourself of the quality. Our offer will convice you that the use of FLUXA® inspection media will reduce costs also in your company.

Experience:	The first choice for an inspection under UV light is FLUXA® concentrate HRS.
Alternatives:	The FLUXA® product range is as versatile as the testing problems.
Selection criteria:	More detailed information can be obtained from technical data sheets, safety data sheets and special prints.

FLUXA® Ready Concentrates: Easy Preparation

The only thing you need to prepare the test liquid is water. The required additives for most situations are already contained in a sufficient amount.

FLUXA® Concentrate FR 9006:	Contains powder F (9001) as indicating agent. Recommendable at the inspection for medium or bigger cracks (semi-finished products) and for low demands to corrosion protection.
FLUXA® Concentrate HRS 9306:	Ideal medium to detect finest cracks under UV-light.
FLUXA® Concentrate HRS/special 9306.22:	Ideal medium to detect finest cracks under UV-light with excellent wetting properties for components, covered with fully or semi synthetic coolant lubricants. No additional washing procedure necessary for the components prior to the inspection.
FLUXA® Concentrate HVP 9357:	Ideal medium to detect finest cracks under UV-light with especially luminous magnetic particles resulting in an excellent contrast ratio at the evaluation. Especially suited for automated crack detection with camera systems.
FLUXA® Concentrate HRS/G 9356:	Properties as HRS 9306, but with increased corrosion protection, e.g. for cast iron
FLUXA® Concentrate TRS 9706:	Unique medium for daylight, halogen and UV-light.

FLUXA® Medium Concentrates: Optimum Compromise Between Price and Preparation Procedure

The medium concentrates already contain a wetting agent and a certain amount of rust inhibitor which will be sufficient for most testing tasks. In this case, only water needs to be added.

FLUXA® Concentrate HGK 9360:	Cheaper alternative to HRS, if demands for rust protection are reduced. For normal forged steel products the rust protection is sufficient. For cast iron parts possibly additional FLUXA® Anti Rust 9026 is required.
FLUXA® Concentrate HKS 9366:	Cheaper alternative to HRS, if demands for rust protection are reduced.
FLUXA® Concentrate HS-O 9314.1:	Oil-suspendable, contains the magnetic powder of HRS.
FLUXA® Concentrate TS-O 9714:	Oil-suspendable, contains the daylight magnetic powder of the TRS. Offers the advantages of testing in the daylight, when oil as carrier fluid is prescribed.
FLUXA® Concentrate BLACK-O 9014.1:	Contains black iron oxide (magnetite) as indicating medium. Oil-suspendable. For daylight testing, with or without white background paint (FLUXA® Background Paint WHITE, art. no. 9015).
FLUXA® Concentrate BLACK-W 9016:	Contains black iron oxide (magnetite) as indicating medium. Water-suspendable. For daylight testing, with or without white background paint (FLUXA® Background Paint WHITE, art. no. 9015).

FLUXA® Powder (Wet Process): Universally Applicable and Most Competitive Possibility

FLUXA® powders designed for the wet process are based on iron oxides. Thus, rust and quick settling are avoided.

FLUXA® Powder F 9001:	Optimal for the detection of bigger cracks, especially used to test semi-finished products.
FLUXA® Powder FS 9101:	Optimal for the detection of medium to finest cracks in testing semi-finished and finished products. High fluorescence intensity.

FLUXA® Ready-to-Use: Ideally Suitable for Manual Testing of Single Parts or On-Site

FLUXA® Suspension HS-O 9314.2:	Ready-to-use, FLUXA® Concentrate HS-O 9314.1 prepared with test oil. Contains the magnetic particles of HRS.
FLUXA® Suspension HS-O 110 9315.2:	Ready-to-use, FLUXA® Concentrate HS-O 9314.1 prepared with FLUXA® Test Oil 110. Contains the magnetic particles of HRS. Complies with aerospace standards AMS 2641, A-A-59230 and ASTM E 144.
FLUXA® Spray HS-O 9314.9; AEROSOL:	Ready-to-use, FLUXA® Concentrate HS-O 9314.1 prepared with test oil. Contains the magnetic particles of HRS.
FLUXA® Spray HRS 9306.9, AEROSOL:	Ready-to-use, FLUXA® Concentrate HRS 9306 prepared with water. Contains the magnetic particles of HRS..
FLUXA® Spray BLACK-O 9014.9; AEROSOL:	Ready-to-use, FLUXA® Concentrate BLACK-O 9014 prepared with test oil. Contains black iron oxide (magnetite) as indicating medium. For daylight testing, with or without white background paint (FLUXA® Background Paint WHITE, art. no. 9015).

DEUTROFLUX® Powder (Dry Process), Article Nos. 9030 - 9031:

These powders are used for the dry process, e.g. for meeting old test specifications or for vortex chamber testing. The powder is applied on the specimen without a carrier medium, i.e. blown over the workpiece, or the residually magnetized workpiece is dipped into the powder bath of the vortex chamber. Suitably fine and coarse qualities should be mixed for these purposes.

FLUXA® Additives: Optimized for Use in Conjunction with FLUXA® Agents

FLUXA® Wetting Agent 9021:	To prepare FLUXA® Powders F, FS and BLACK in water, or to prepare FLUXA® High Concentrates F, FS.
FLUXA® Anti Rust 9026:	To prepare FLUXA® Powders F, FS and BLACK in water, or to prepare FLUXA® High Concentrates F, FS. If needed, also together with FLUXA® Medium Concentrates HKS and BLACK-W. FLUXA® Anti Rust is specially designed for ferrous metals. Not suitable for non-ferrous metals (which cannot be tested by MT at all; as corrosion protection for ultrasonic testing, the anti-corrosive ECHOKOR art. no. 9027 is available).
FLUXA® Defoaming Agent 9024:	For foam problems in aqueous systems. To be used only in exceptional cases (extremly soft water) and with lowest possible amount.
FLUXA® Background Paint WHITE, 9015:	White background paint in spray cans for magnetic particle inspection according to the "black/white" procedure.
FLUXA® Test Oil 9040/9041/9042:	To prepare oil concentrates 9014, 9314 and 9714, FLUXA® Paste F and to prepare FLUXA® Powders F, FS, BLACK. FLUXA® Test Oil is characterized by optimum compatibility to FLUXA® Powders, it is non-fluorescent and has an ideal viscosity for testing. As experience has shown, it provides an excellent skin tolerance. Flash point 9040: 65 °C, flash point 9041: 110 °C, flash point 9042: >160 °C, no labelling requirements and biodegradable.
FLUXA® Biocide 9002:	Combination product for control of bacteria, fungi and algae.

Detailed information on standards and prescriptions for each FLUXA® product are listed in the corresponding technical data sheet.
Technical data sheets and safety data sheets are available from our homepage www.karldeutsch.de.
Our homepage also contains a complete list of FLUXA® products.

Ordering Information

	Product	Carrier Medium	Mixture Ratio	Settling Volume ASTM (ml)	Packing	Ordering No.
WET PROCESS	**FLUXA® Concentrate HRS**	**water**	**1:20-1:40**	**0.2-0.1**	**1 l bottle 5 l can**	**9306.1 9306.2**
	FLUXA® Concentrate HRS/special	water	1:20-1:40	0.2-0.1	5 l can	9306.22
	FLUXA® Spray HRS	water	—	0.2	500 ml aerosol	9306.9
	FLUXA® Concentrate HRS/G (with increased corrosion protection)	water	1:20-1:40	0.2-0.1	1 l bottle 5 l can	9356.1 9356:2
	FLUXA® Concentrate HGK	water	1:60-1:100	0.2-0.1	1 l bottle 5 l can	9360.1 9360.2
	FLUXA® Concentrate HKS	water (+ possibly with rust inhibitor)	1:100-1:200	0.2-0.1	1 l bottle 5 l can	9366.1 9366.2
	FLUXA® Concentrate HVP	water	1:40-1:80	0.2-0.1	1 l bottle 5 l can	9357.1 9357.2
	FLUXA® Concentrate HS-0	oil	1:100-1:200	0.2-0.1	1 l bottle	9314.1
	FLUXA® Suspension HS-O FLUXA® Spray HS-O	oil oil	— —	0.2 0.2	10 l can 500 ml aerosol	9314.2 9314.9
	FLUXA® Suspension HS-O-110	oil	—	0.2	10 l can	9315.2
	FLUXA® Powder F	water + additive or oil	0.5-0.25 g/l	0.13-0.07	500 g tin 1 kg tin	9001.1 9001.2
	FLUXA® Powder FS	water + additive or oil	0.5-0.25 g/l or oil	0.13-0.07	500 g tin 1 kg tin	9101.1 9101.2
	FLUXA® Concentrate TRS	water	1:20-1:40	0.3-0.15	1 l bottle 5 l can	9706.1 9706.2
	FLUXA® Concentrate TS-O	oil	1:100-1:200	0.3-0.15	1 l bottle	9714.1
	FLUXA® Concentrate BLACK-O	oil	1:100-1:200	1.3-0.65	1 l bottle	9014.1
	FLUXA® Spray BLACK-O	oil	—	1.3	500 ml aerosol	9014.9
	FLUXA® Concentrate BLACK-W	water (+ possibly with rust inhibitor)	1:100-1:200	1.3-0.65	1 l bottle	9016.1
ADDITIVES / OIL	FLUXA® Wetting Agent	water	1:1000-1:2000	—	1 l bottle 5 l can	9021.1 9021.2
	FLUXA® Anti Rust	water	1:40-1:100	—	1 l bottle 5 l can	9026.1 9026.2
	FLUXA® Defoaming Agent	water	1:1000-1:2000	—	1 l bottle	9024.1
	FLUXA® Background Paint, WHITE	—	—	—	500 ml aerosol 5 l can 10 l can	9015.1 9015.5 9015.2
	FLUXA® Test Oil	—	—	—	10 l can 200 l barrel	9040.2 9040.9
	FLUXA® Test Oil 110	—	—	—	10 l can 200 l barrel	9041.2 9041.9
	FLUXA® Bio Test Oil	—	—	—	10 l can 200 l barrel	9042.2 9042.9
	FLUXA® System Cleaner	—	—	—	1 l bottle 5 l can	9025.1 9025.2
	FLUXA® Biocide	—	—	—	1 l bottle 10 l can	9002.3 9002.1

Leaflet P 90 Fluxa e 07_16 · Subject to change without notice · Printed in Germany 07/16 · P90Fluxa.EN.0716

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DIN EN ISO 9001 certified

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