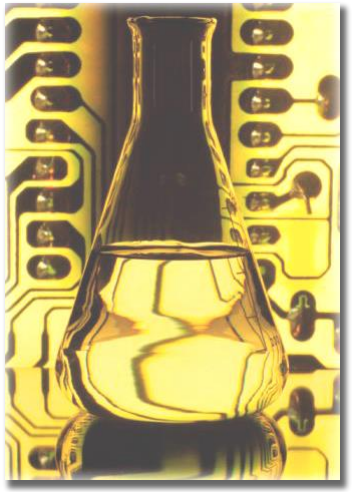
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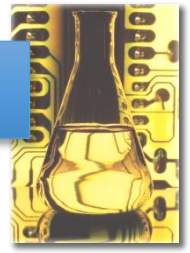
Interflux®, bringing chemistry to electronics for over 45 years

No-Residue™ Technology



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Interflux® No-Residue™ Technology



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General

The Interflux® No-Residue™ Technology applies to soldering fluxes for wave and selective soldering that have been developed to evaporate in the soldering process, leaving virtually no residue on the PCB board after soldering.



→ Extremely clean PCB boards



→ Extremely high electro-chemical reliability



→ Extremely high compatibility with conformal coatings

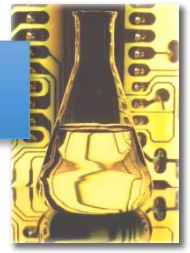


→ No contact problems in ICT-testing

→ Easy machine and carrier cleaning

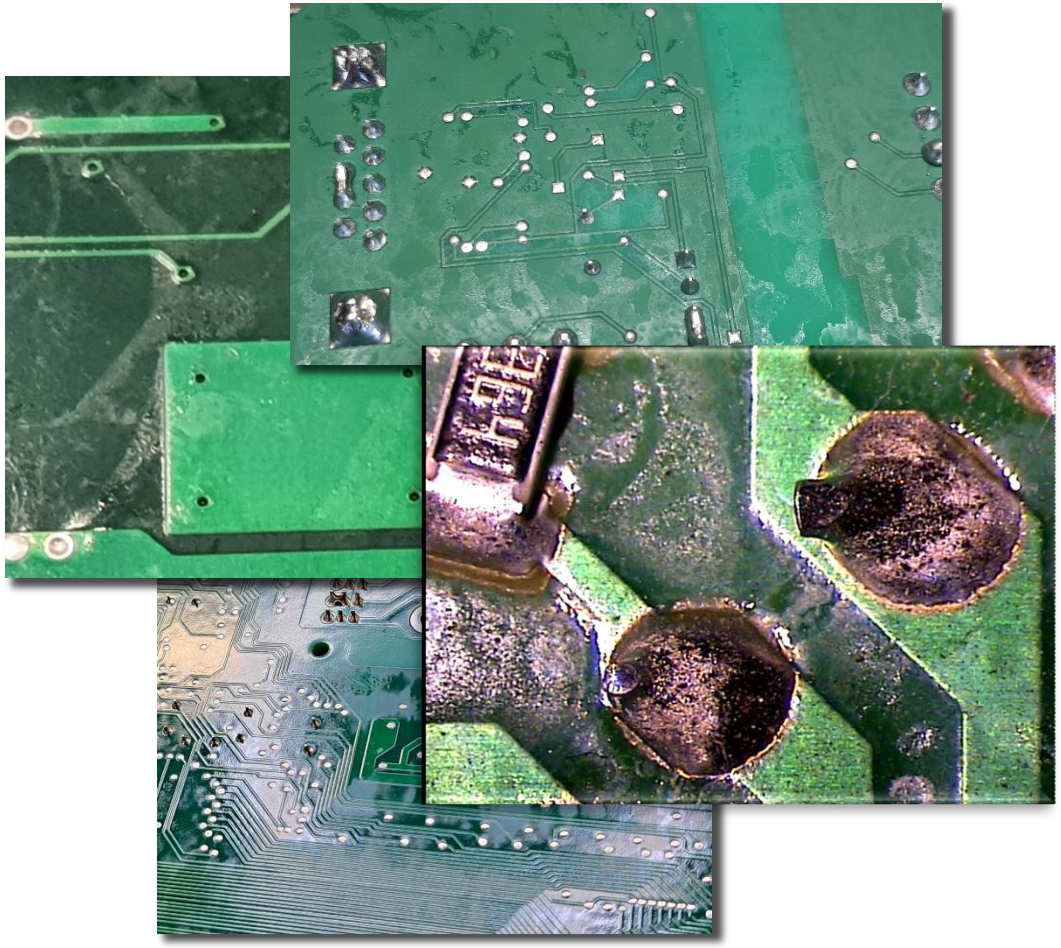
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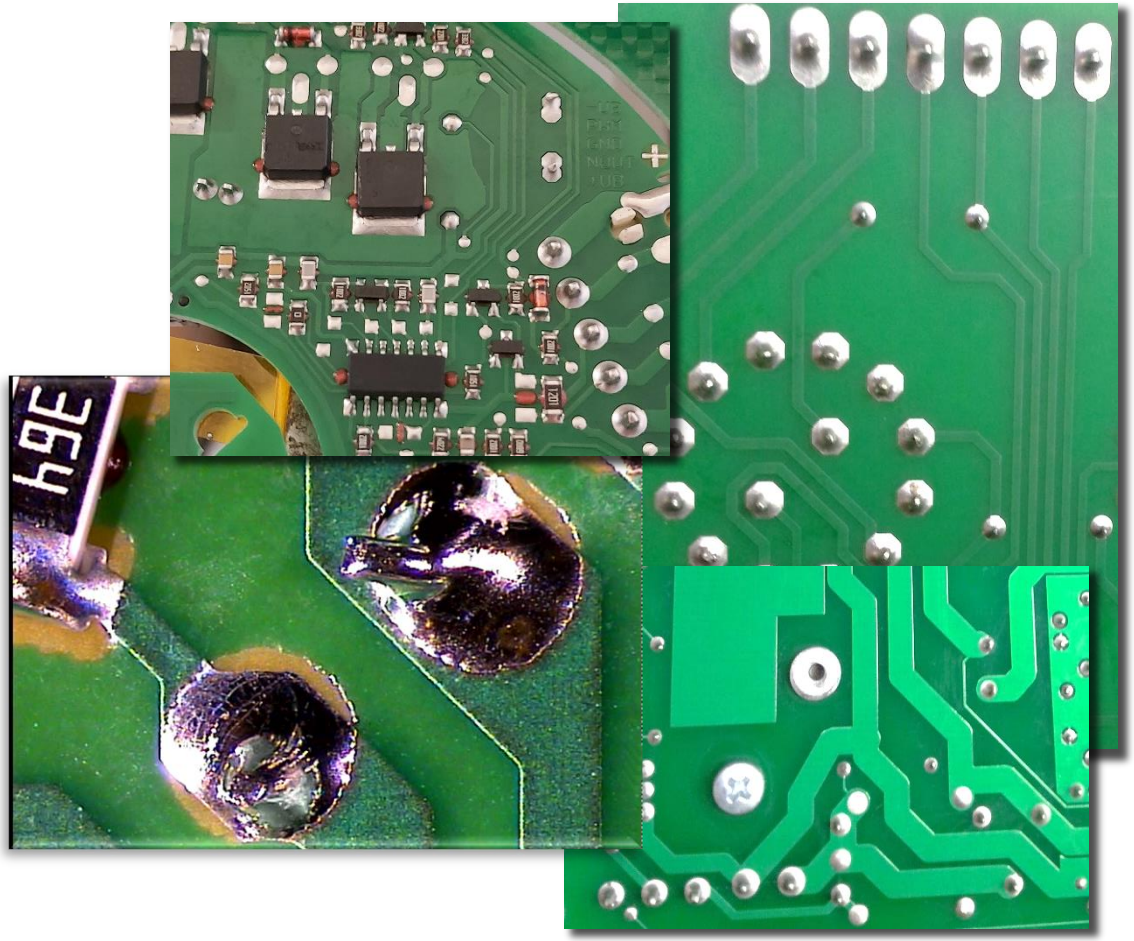


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Traditional fluxes

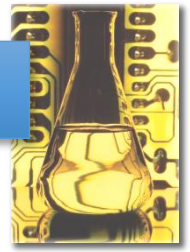


No-Residue™ fluxes



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Conditions for a No-Residue™ situation



→ Flux application needs to be in areas with wave contact.

- Avoid flux application between PCB and PCB carrier in wave soldering

- Avoid flux application outside the contact area of the nozzle in selective soldering



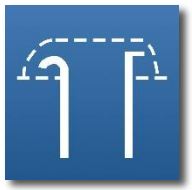
→ Apply the minimum flux quantity needed for the application.

- PCBs with higher thermal mass in general require more flux



→ Apply sufficient preheating

- PCBs with higher thermal mass require more preheating

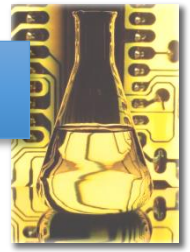


→ Apply sufficient wave contact

- PCBs with higher thermal mass require more wave contact

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IF 2005 No-Residue™ flux series



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Fluxes for wave and selective soldering

→ IF 2005M

→ IF 2005K

→ IF 2005C

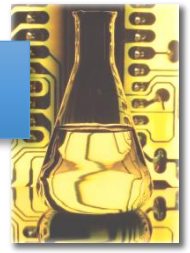






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IF 2005 No-Residue™ flux series



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→ No-Residue™ Technology

→ No-clean

→ Alcohol based: activated solvent complex

→ OR/L0

→ Absolutely rosin and resin free

→ Absolutely halogen free

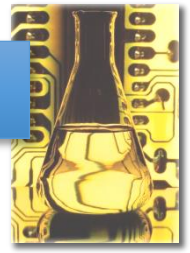
→ Used in all electronic branches

→ Long history of use worldwide



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IF 2005 No-Residue™ flux series



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Application

→ IF 2005 series fluxes are interchangeable.

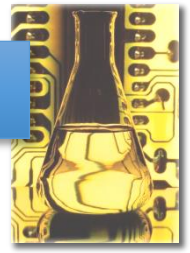
→ According to the specific case, one type of flux can be more suitable than the other.

Flux	Solid content (%)	LMPA & SnPb wave soldering	lead-free wave soldering	selective soldering	component tinning	hand soldering
IF 2005M	1,8	preferred	good	possible	good	possible
IF 2005K	2,5	good	preferred	good	good	possible
IF2005C	3,3	possible	good	preferred	good	possible

NOTE: LMPA = low meting point soldering, e.g. with the LMPA-Q alloy

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IF 2005 No-Residue™ flux series



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Reliability field example IF 2005C

→ Application:

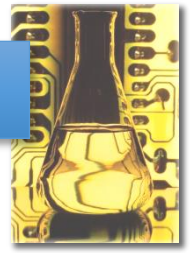
- Classification for global automotive system's supplier
- Automotive rank 1 / IPC TM 610D class 3
- Lead-free selective soldering application with SnCuNi

→ Flux corrosion test on soldered electronic unit:

- 0°C / 150°C
- 1 hour/cycle, 10 min at min/max T°
- 2.000 cycles
- 5 VDC

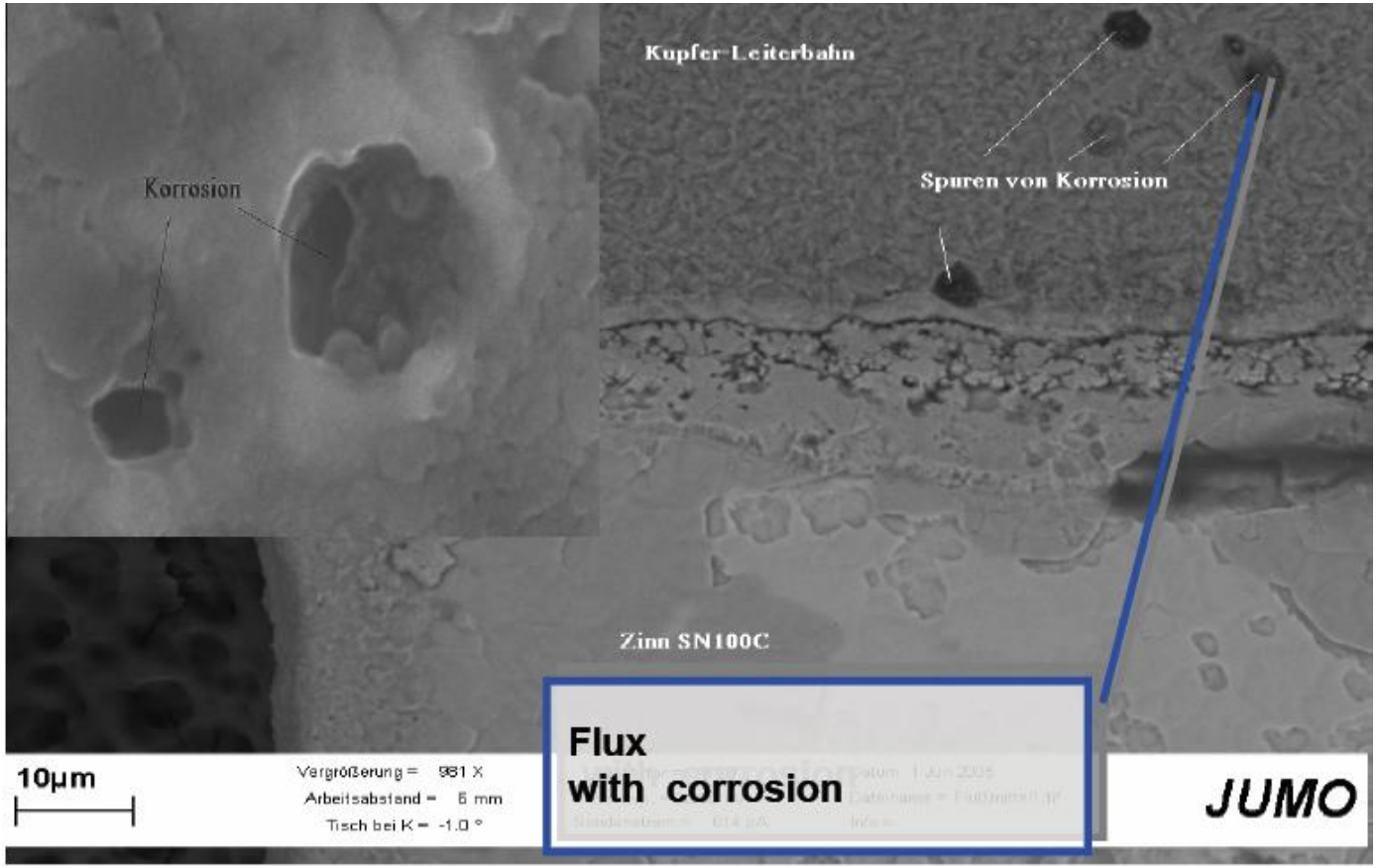
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IF 2005 No-Residue™ flux series



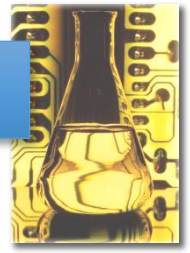
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→ **Corrosion witnessed on Cu-layer with traditional fluxes**



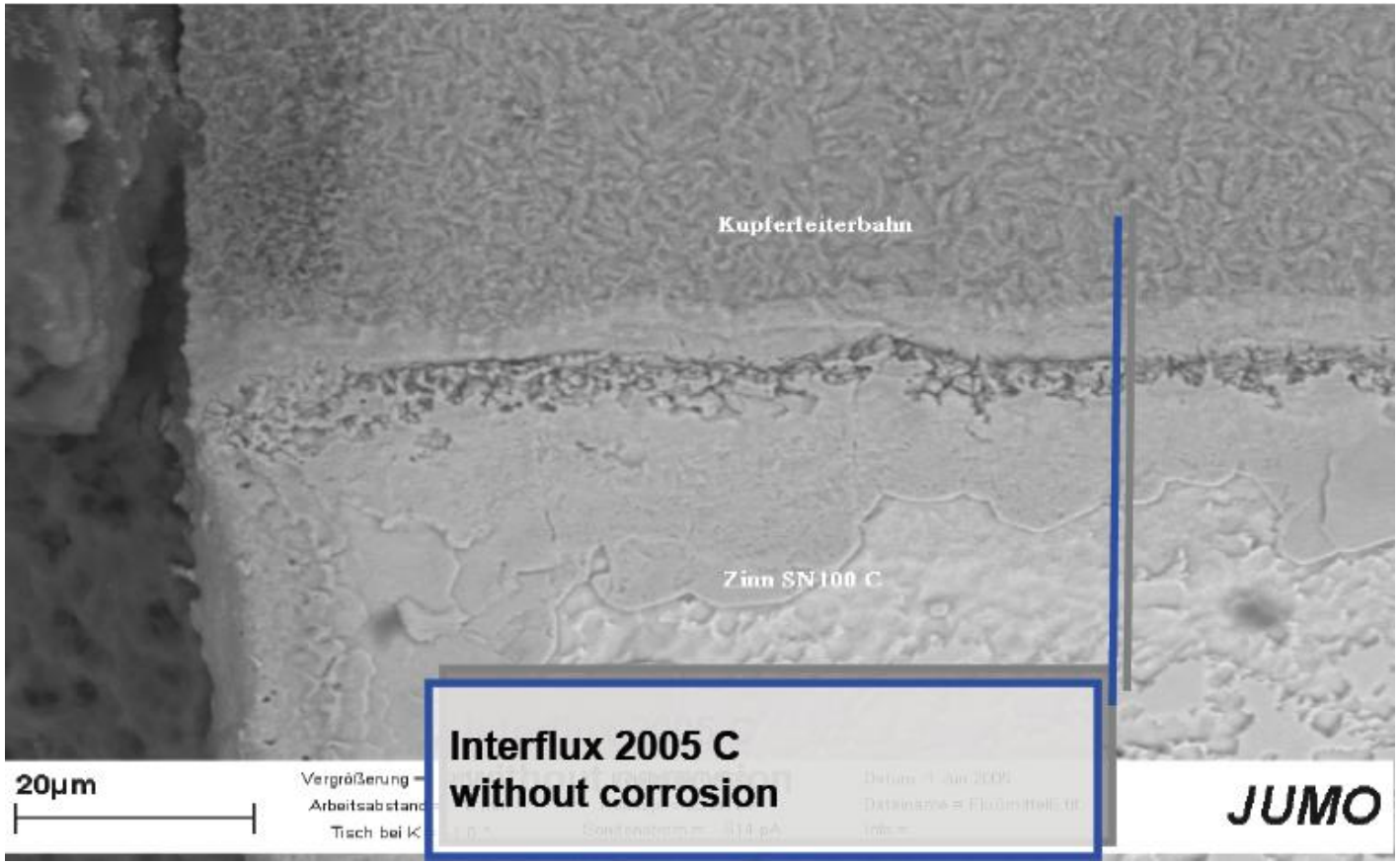
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IF 2005 No-Residue™ flux series



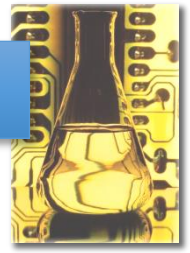
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→ **No corrosion witnessed with IF 2005C**



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IF 2005 No-Residue™ flux series



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→ No Corrosion witnessed with IF 2005C

Pb free – Testresult - Corrosiontest
Selective - Soldering with SN CU NI

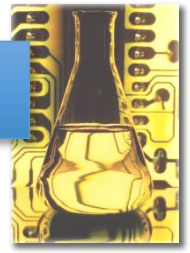
JUMO

Picture	Flux	Manufacturer	Corrosion
1	Flux 1	Balver Zinn	Yes
2	Flux 2	Alpha metals	Yes
3	Flux 3	Alpha metals	Yes
4	Flux 4	Alpha metals	Yes
5	Flux 5	Kester	Yes
6	IF 2005 C	Interflux	no
7	Flux 7	Solder Chemistry	No, conditional
8	Flux 8	Emil Otto	Yes
9	Flux 9	Solder Chemistry	Yes
10	Flux 10	Balver Zinn	Yes

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In Te Rf Lu X

IF 2005 No-Residue™ flux series



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Reliability field example IF 2005C

→ Application:

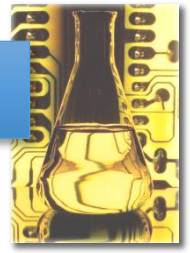
- Automotive steering wheel controls unit
- Lead-free selective soldering application with SAC 305

→ Flux electro migration test:

- According J-STD-004 and EN 61109-1-1
- Sample preparation with limited preheat (85°C) and without wave contact to simulate non activated flux residues as possible in the process
- 85°C / 85% R.H.
- 5 VDC
- SIR measurement every 60s

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IF 2005 No-Residue™ flux series



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Traditional flux

- Poor SIR
- Electro migration

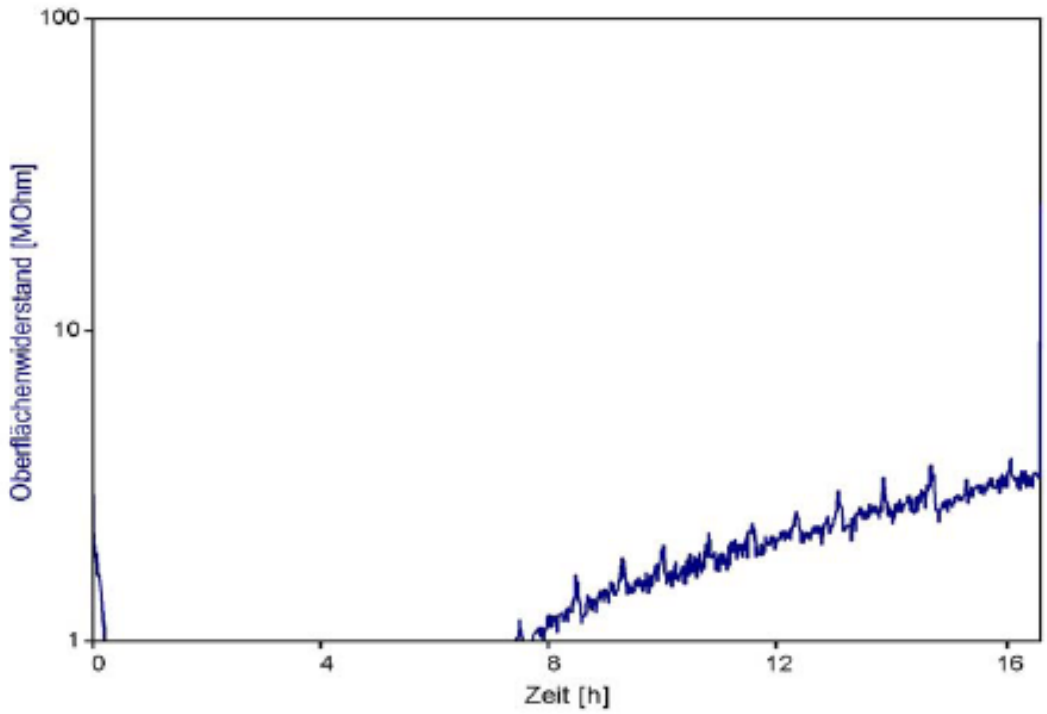


Bild 4: sehr schlechter Oberflächenwiderstand Flux C

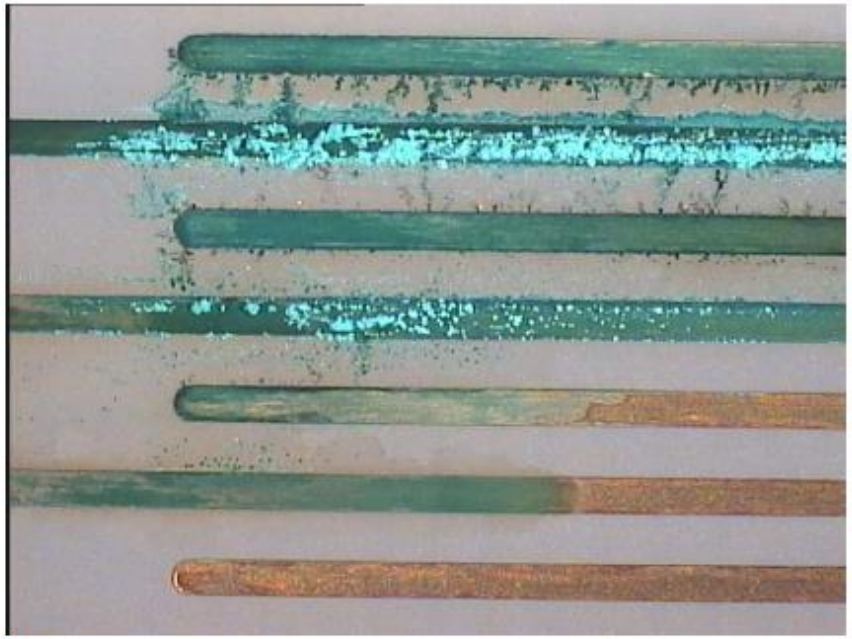
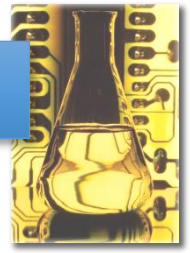


Bild 10: Flux C nach Test

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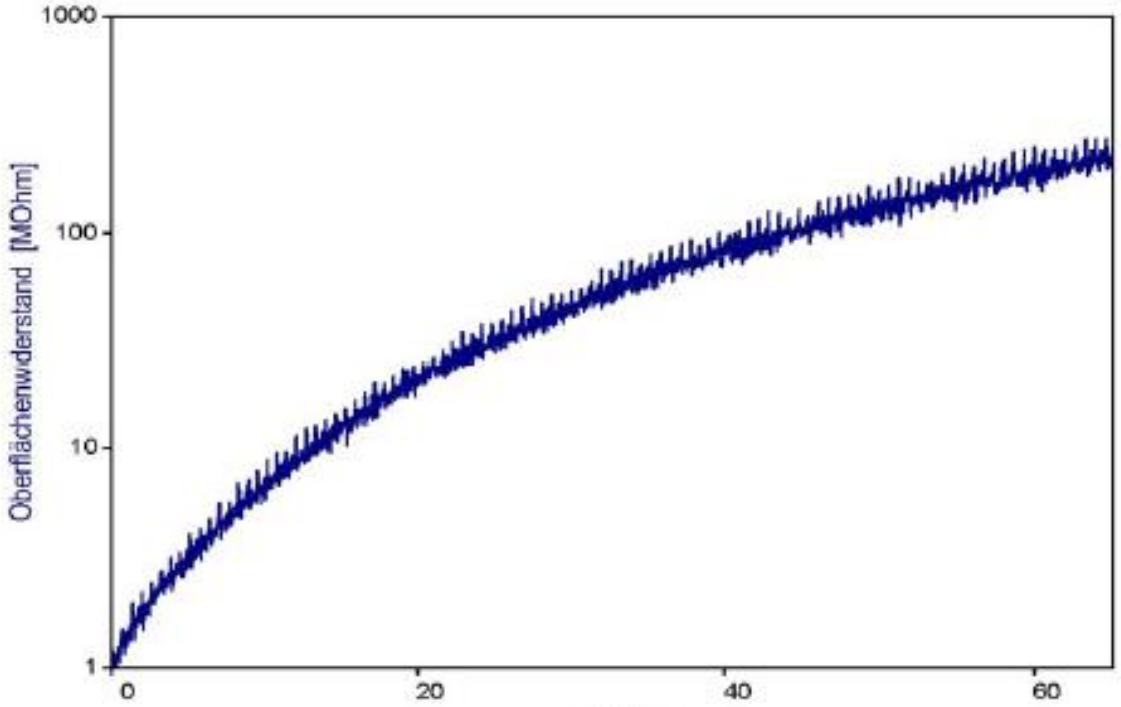
IF 2005 No-Residue™ flux series



Interflux.com

IF 2005C

- Good SIR
- No electro migration



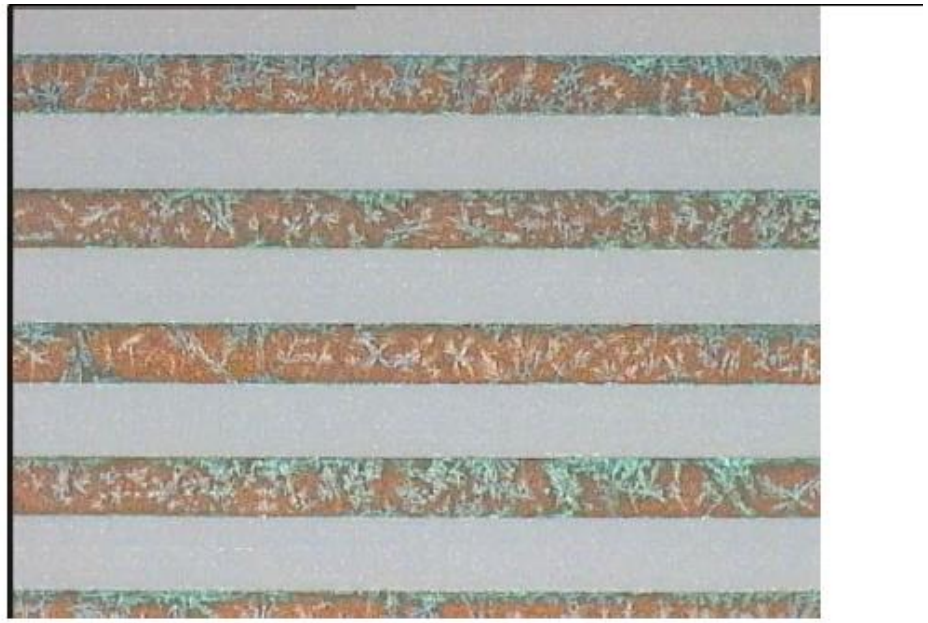
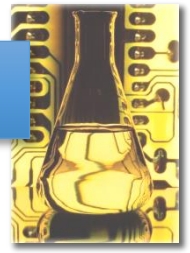


Bild 11: Interflux IF 2005C (Versuch aus Bild 6) keine Migration nachweisbar

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Reliability field example IF 2005M

→ Application:

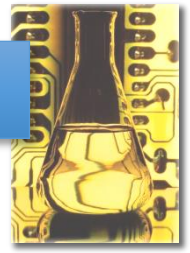
- Aerospace, aviation, defense electronics
- Conformal coating without cleaning

→ Thermal shock and SIR test:

- Samples with and without conformal coating: Humiseal 1B73
- MIL – STD - 883D Method 1010.7 Condition B / IPC-TM-650 2.6.3.3/ Thales TRT
- 55°C 15 min / +125°C 15min : 1000 cycles
- 85°C/ 85% R.H. 1000Hrs 50VDC
- SIR measurement
- Visual and X-Ray inspection on dendrites (electro migration)
- Conformal coating adhesion test

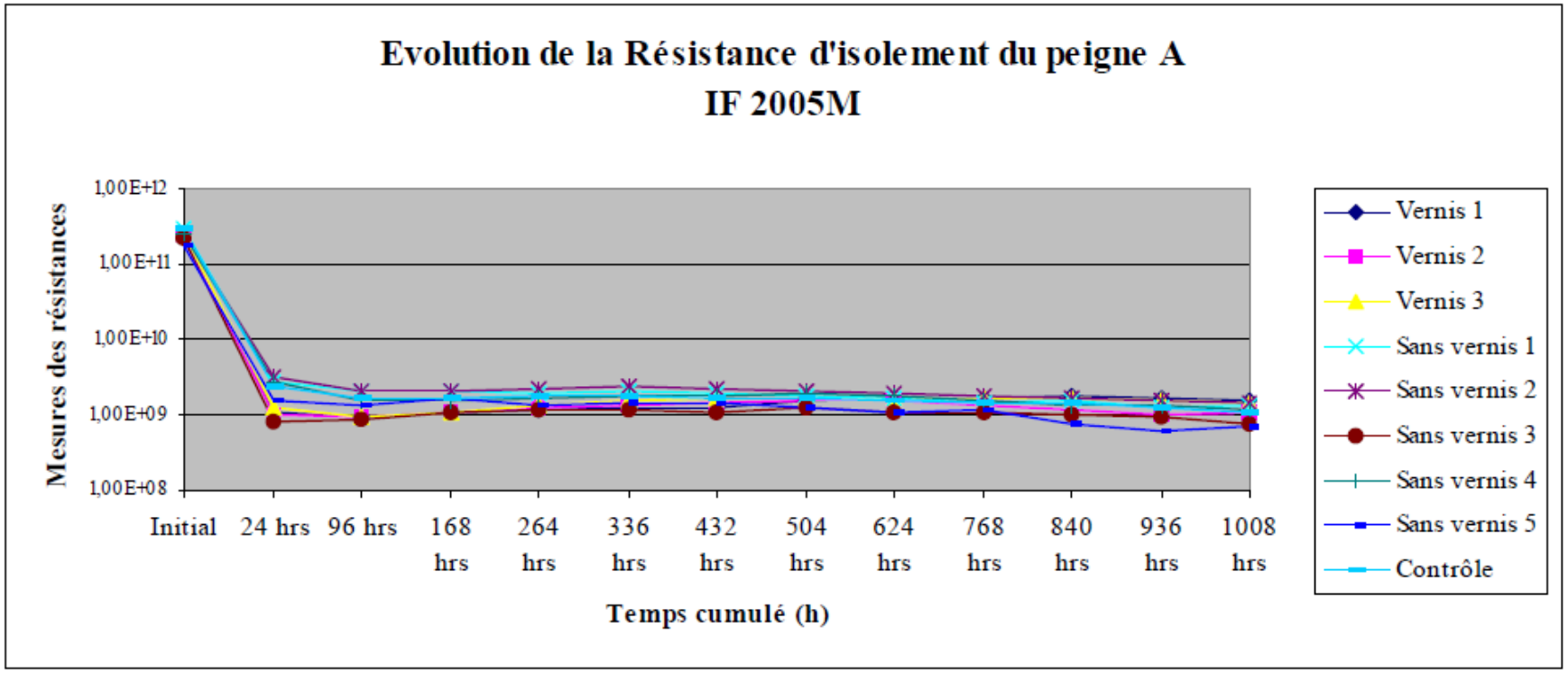
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SIR results IF 2005M with comb pattern 200µm distance



- No electro migration witnessed
- Good conformal coating adhesion

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Any questions?

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