

NOCOLOK® News #1-2023

April, 2023

New Member of the NOCOLOK® Team – Bernd-Martin Luitjens

Bernd-Martin Luitjens joined the NOCOLOK® BU on January 1, 2023. He will continue to be responsible for analytical support within the NOCOLOK® Competence Center as manager of the analytical laboratory.

After the handover phase in the 2nd half of 2022, he additionally takes over responsibilities from Alfred Ottmann, who retired on December 31, 2022. The task areas such as extended physico-chemical characterization and product benchmarking, metallography and technical customer support for the portfolio of NOCOLOK® brand products will complement his previous field of activity.

Bernd-Martin graduated as a chemical engineer and has 26 years of experience in instrumental and chemical analysis in the Solvay Group, first in R&D of the former pharmaceutical business and for the last 11 years as laboratory manager in the fluorine business.

We thank Alfred for his many years of contribution and wish him all the best for his welldeserved retirement.





NOCOLOK® R&I Pilot plant

The relocation of the NOCOLOK® Research & Innovation (R&I) pilot plant and laboratories from Hannover to Bad Wimpfen has been successfully completed. Since March 2022, the department has seamlessly continued the ongoing research activities in the new laboratories. The facility is well equipped to handle hydrogen fluoride and to develop new fluxes at laboratory and pilot scale. Besides specific analytical equipment, a laboratory glass furnace is available to evaluate the brazing performance of our flux products. As part of the NOCOLOK® Competence Center, the R&I team works closely with the technical service and analytic team to provide the best support that our customers need.

After careful risk and safety analysis, the pilot plant is operational and provides an excellent intermediate step between laboratory scale and industrial production. It is used for scale-up of customer samples and to provide support for our internal process optimization and the NOCOLOK® production.



NOCOLOK® R&I Team: Enrico Damm, Dr. Alexander Rehmer, Andreas Becker







NOCOLOK® Pilot plant and laboratory

20th International Brazing Seminar

The restart of the annual event turned into its 20th year. Once again the course was fully booked with more than 24 participants from 13 different companies visiting the training sessions around aluminium flame and furnace brazing, comprising presentations carried out by experts for metallurgy, chemistry, gases, equipment and application study cases. We received positive feedback from all participants, with appreciation of content and requests for more sample discussions.



SOLVAY International Brazing Seminar, Hannover 14./15. March 2023

Conference ALUMINIUM BRAZING 2023

23. – 24.05.2023, Düsseldorf, Radisson Blu Conference Hotel

The NOCOLOK® team is pleased to announce the next participation at the 'International Congress and Exhibition on Aluminium Brazing'. This event will be combined with the 'Conference on Aluminium Heat Exchanger Technologies for Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R)'.

Since 2000 - the 'Aluminium Brazing' brings together professionals of the aluminium heat exchanger industry with their broad scientific and technological backgrounds as well as experiences in design and application of their products. The congress in May 2023 will be an excellent opportunity for meeting once again in person with NOCOLOK® team.

More information and registration





Introduction: New Coloured NOCOLOK® Labels and Drums

Since 2022, there are uniform, brownish 40 kg fibre drums for all NOCOLOK® types produced in Bad Wimpfen. The labels of the different NOCOLOK® fluxes have also been standardised and show different colour codes. Delivery reliability for our customers was at the heart of our ambition for this improvement. We want to remain the market-benchmark in terms of reliable delivery of our NOCOLOK® product portfolio!



Solvay Paper at the DVS Conference

At the upcoming DVS conference in May 2023, Solvay will present a paper on its recent investigations on the root cause of gel formation and discuss proposed solutions to minimize the interaction of coolant and flux in aluminium heat exchangers. In several instances, formation of gel in engine coolant systems has been reported, resulting in clogging and degradation of the heat-transfer performance. This clogging is not only limited to internal combustion engines but can also occur in electric vehicles. It is known that the type of coolant and its composition has a significant impact on the risk of gel formation. Based on the laboratory results with different coolant formulations, a differentiation between high and low coolant stability has been observed. The choice of corrosion inhibitors system (silicate vs. non-silicate) in the coolant has a significant impact. The standard commercially available silicate coolants (Si-OAT) show increased interaction with post braze flux residue than coolants without silicate. The reason being that the silicate is not stable in presence of other cations like calcium, magnesium and aluminium in solution. A suitable stabilization of silicate against aluminium ions is necessary to minimize the interaction with post braze flux residue. In search of a suitable

solution against gel formation, two concepts have been tested.

The first approach is based on the coolant technology itself. Tests with various coolants containing either an improved stabilized silicate corrosion inhibitor or no silicate based corrosion inhibitor with a low conductivity were performed in the presence of post braze flux residue.

The second concept is based on the modification of brazing flux properties, especially in terms of solubility. Two flux modifications have been evaluated. As a result, both in standard commercially available Si-OAT engine coolants as well as in new coolant developments for electric vehicle application with and without silicate corrosion inhibitor, a reduction of gel formation was observed compared to standard post braze flux residue.



Coolant laboratory test equipment



Results showing the dependence of the formation of gel on the type of coolant (left) and the improvement with new flux developments (right)

The NOCOLOK® website gives access to all information

Exchange your experiences about aluminium brazing in the Brazing Blog

All videos about aluminium brazing on YouTube

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NOCOLOK® NEWS Presents information for NOCOLOK® users.

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