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Stuttgart, October 10th, 2016

Proposal Number: 16 -xxxx

Cleanliness evaluation regarding particles (PAC) and organic molecules (MOC)

Dear Mr.Lastovicka,

As discussed, enclosed is a proposal concerning the cleanliness evaluation of samples concerning particulate (PAC) and molecular organic contamination (MOC) with tie following topics:

1. **Analysis of witness samples** (stainless steel sheet samples DIN A4 in size):
    a. The PAC-Analysis of the exposed surface (one surface only) is done by rinse extraction, filtration and subsequent analysis of the filter for particulate contaminations > 15 µm using an ISO 3 environment. **One PAC analysis of a DIN A 4 stainless steel witness sample is offered at a fixed price of 1250 Euro** including the cleaning, blank value measurement and shipment of the witness samples in a suitable pre-cleaned sampling container. For the shipment container, please see chapter 4.
    b. The MOC-Analysis of the exposed surface (one surface only) is done by solvent extraction, and subsequent analysis of the solvent for molecular organic contaminations using FTIR. **One MOC analysis of a DIN A 4 stainless steel witness sample is offered at a fixed price of 950 Euro** including the cleaning, blank value measurement and shipment of the witness samples in a suitable pre-cleaned sampling container. For the shipment container, please see chapter 4.

2. **Analysis of final rinse solvent** (using pre-cleaned Sampling containers provided by Fraunhofer IPA):
    a. The PAC-Analysis of the final rinse solvent is done by filtration and subsequent analysis of the filter for particulate contaminations > 15 µm using an ISO 3 environment. **One PAC analysis of a rinse solvent is offered at a fixed price of 1250 Euro** including the blank value measurement and provision and shipment of suitable pre-cleaned sampling containers.
    b. The MOC-Analysis of the final rinse solvent is done by 2-phases solvent extraction and subsequent analysis of the solvent for molecular organic contaminations using FTIR. **One MOC analysis of a rinse solvent is offered at a fixed price of 950 Euro** including the blank value measurement and provision and shipment of the pre-cleaned sampling containers.

3. **Additional analysis of the solvent extracts or filters:**
    a. The subsequent analysis of the solvent extract is done using GC/MS (qualitative/quantitative assessment of all detected substances by NIST database MS spectra comparison and quantification of the total individual response values to a calibrated reference standard hexadecane. **One solvent analysis using GC/MS is offered at a fixed price of 550 Euro.**
    b. The subsequent analysis of the PAC-filters can be performed with REM-EDX or Micro-ATR-FTIR. Pricing depends on the number and size of particles and will be provided on request after the first filter analysis.

4. **Transport container for DIN A4 stainless steel witness samples**

    In order to enable a transport of the witness samples without subsequent PAC/MOC contamination, a stainless steel transport container for the already designed DIN A 4 stainless steel witness samples will be designed, assembled and provided. Therefore, it is mandatory to get the witness samples themselves. **The providence of one custom-made suitable shipment container is offered at a fixed price of 550 Euro.**

5. **MOC emission measurements of materials**

    The MOC-outgassing (emission) of the material is measured based on ISO 16000-9 using small scale emission chambers/emission cells. The measurement temperature can be chosen between 23 and 120 °C. **The MOC emission measurement for one material is offered at a fixed price of 750 Euro including the blank value of the selected test setup.**

The fixed price quoted in this proposal is net and is subject to statutory sales tax, if applicable.

The client bears all direct (withholding tax, etc.) and indirect (value added taxes, etc.) taxes and dues caused by the performance and levied upon in the country of the client, irrespective of what party is legally obliged to declare and/or pay taxes or dues. So all prices under this proposal are understood as free of any direct and indirect taxes levied upon in the country of the client.

The price quoted will be due 30 days after the invoice date without cash discount on completion of the testing and providence of the pdf-test report in English language.

The services listed above will be commenced after contract comes into effect. Traveling costs are not included in the price. The proposal is valid until 31.12.2016.

Other matters

Where fulfilment of contractual obligations of Fraunhofer-Gesellschaft requires a permit due to national, European, United States or international foreign trade law regulations, including an embargo (and/or other sanctions), contractual performance will be subject to authorization by the competent authority; in case the authorization is not granted, there shall be no breach of contract or contractual obligation on Fraunhofer-Gesellschaft's part. The same applies if fulfilment of the contract should be prohibited due to the regulations cited.

Any damage compensation obligation due to delays or obstructions to performance in view of national, European, United States or international foreign trade law regulations, including an embargo (and/or other sanctions) is expressly barred. The same applies to other claims (such as repayment or guarantee claims, which are due to advance payment bonds, etc.).

If the Client is entitled under the contractual provisions in any specific case to award licenses to the research and development results for use outside of Germany as well, the Client shall comply with any applicable German, European, United States or international foreign trade law regulations, including an embargo (and/or other sanctions).

The »General terms and conditions for research and development contracts at the Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Edition 2002/II« apply. Other than stated in clause 14.1 of our General Terms and Conditions, this proposal does not require a genuine signature.

Should you have any queries, please do not hesitate to contact me or Mr. Rochowicz (-1175).

Kind regards

Dr.-Ing. Markus Rochowicz
Group Manager

Dr.-Ing Markus Keller
Project Management

Annex: »General terms and conditions for research and development contracts at the Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Edition 2002/II«