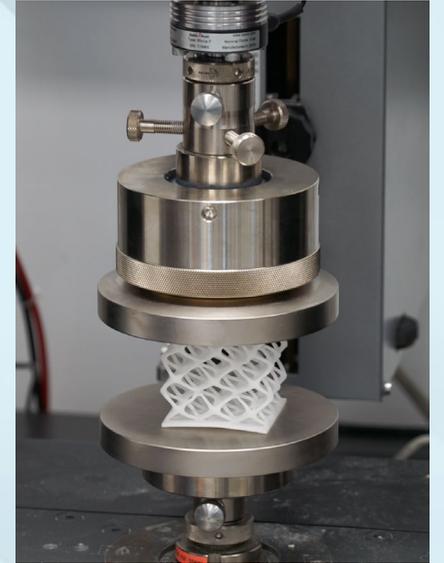




Ultrasim® 3D

Testing for AM (TfAM)

March 2024



WHY Ultrasim® 3D Testing for AM (TfAM)?

150+ Test Methods

9 industries and customized parts testing



Standard



Industry-Specific



Parts Testing

Material-agnostic

BASF Forward AM material and external material independent of the AM technology

3D Printing Specialists

of materials and technologies



We leverage BASF's 150+ years of materials expertise and BASF Forward AM's dedicated expertise in additive manufacturing.

One-Stop Solution

and not just a material provider. We make the most out of your 3D printing project

WHAT do we offer?

What you get:

- Mechanical & thermal properties (see full list here)
(tensile -, compression -, flexure -, fatigue -, impact test, DMA, etc.)
- Industry-specific properties (see full list here)
(Railway, Medical, Aerospace, Automotive, Electrical, etc.)
- Test report as PDF
- Priority testing
- Testing consultancy
(e.g. testing setup and procedure, norms & certification, etc.)
- Print parameter optimization
(Interpretation of test results and print support)

Optional Add-on:

- Parts testing (e.g. crash tests automotive bumper, life-cycle test footwear, burst test, etc.)

What AM technologies:

What AM materials:

What we need from you:

Price:

STARTER

Testing on Demand

Ideal for customers wanting to understand material properties on demands or want to prove that the 3D printed application fulfills testing requirements.



MJF/ SLS/ LCD/ DLP/ FFF

- BASF Forward AM materials
- 3rd party material

3D printed samples + test method

First 6 months
no MOQ!

See Test Catalogue

PREMIUM

Subscription Model

Ideal for customers wanting to consistently track their quality in each print job and build up trust in their quality measures.



MJF/ SLS/ LCD/ DLP/ FFF

- BASF Forward AM materials
- 3rd party material

3D printed samples + test method

3-Months-Sub

- 3.000€/ 3 months (MOQ)
- 15% Discount on all tests

12-Months-Sub:

- 12.000€/ 12 months (MOQ)
- 25% Discount on all tests

ENTERPRISE

Full-Service Testing

Ideal for customers wanting or already onboarded to our material with full support from our Product Teams including a dedicated testing service to validate their machines with our materials.



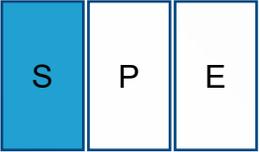
MJF/ SLS/ LCD/ DLP/ FFF

- BASF Forward AM materials

3D printed samples + test method

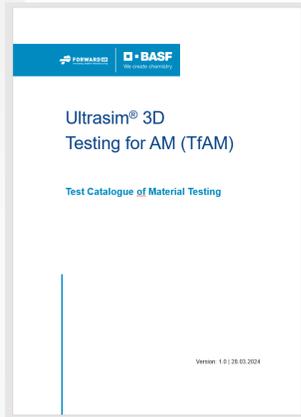
ON REQUEST

Starter Workflow



1. Choose your test directly from our test catalogue

We provide a test catalogue with all mechanical and industry-specific tests. Choose your needed tests and get in contact with us.



2. Send us your 3D printed specimens

You supply test specimens that are printed by yourself or, alternatively, printed by BASF Forward AM. Use our sample test form and label as identification.



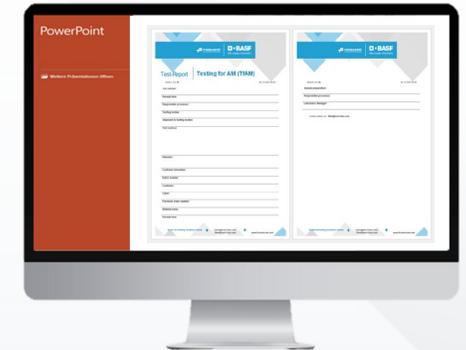
3. We perform the test service

Once the sample has arrived, we will carry out the material tests you require.

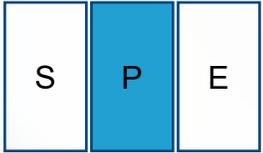


4. We provide reports and data

You receive a report and the raw data of the requested tests.



Premium Workflow



1. Meeting to understand your need of material testing

We get in contact to discuss jointly the material testing and testing methods you need.



2. Choose between our 3-month or 12-month subscription

Choose between the subscription models and get a quote for the full term.

3-month-Sub

15%Discount on all tests*1

*1 MOQ: 3.000€/ 3 months

12-month-Sub

25%Discount on all tests*2

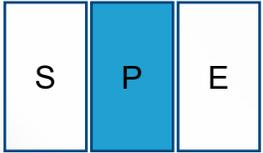
*2 MOQ: 12.000€/ 12 months

3. Send us your 3D printed specimens

You supply test specimens that are printed by yourself or, alternatively, printed by BASF Forward AM. Use our sample test form and label as identification.



Premium Workflow



4. Monthly testing

Once the sample has arrived, we will carry out the monthly material tests you requested.



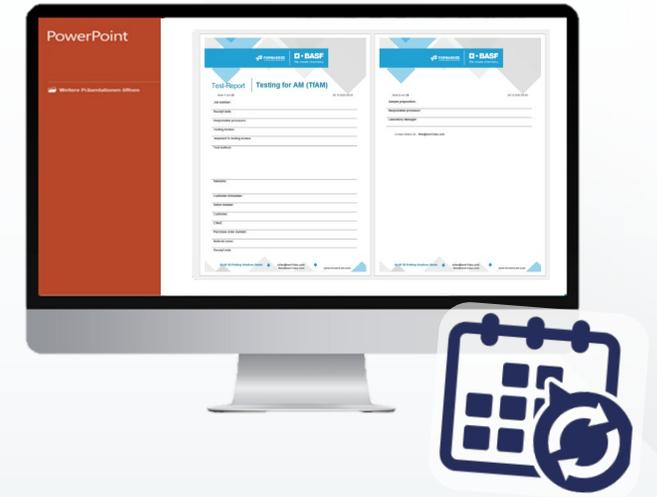
5. Prioritization

For our premium customers we ensure necessary resources for a fast iteration.

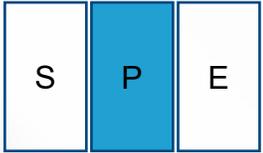


6. We provide reports and data monthly

You receive a report and the raw data of the tests requested monthly.



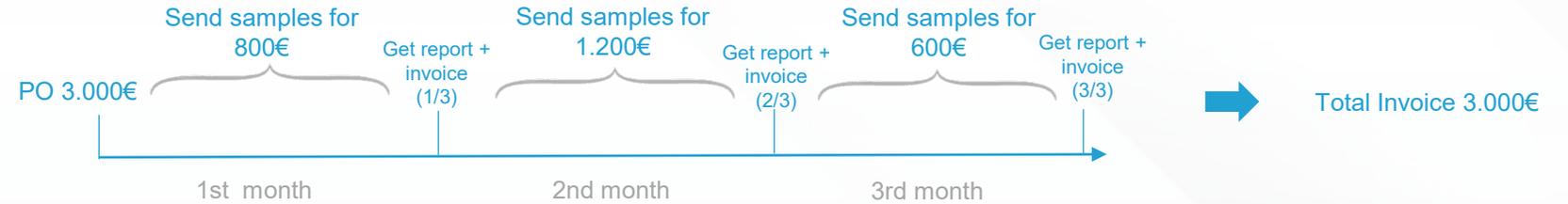
Premium Workflow



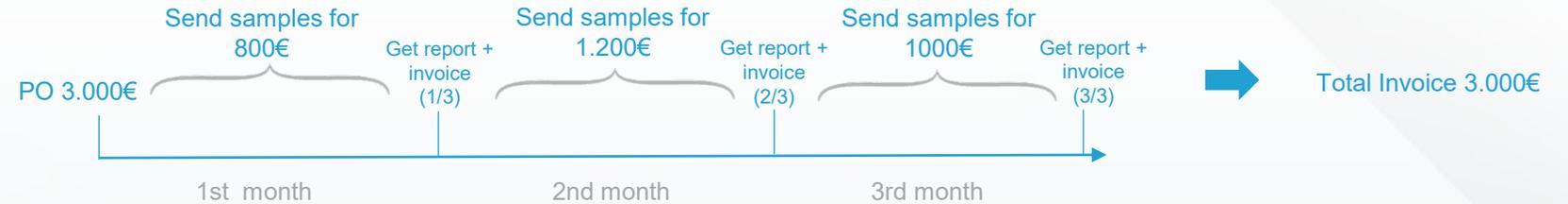
Example

The pricing depends on one of this three scenarios

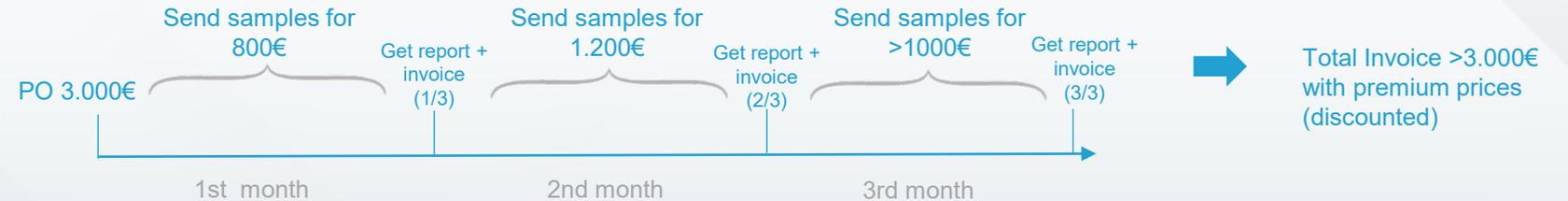
1. Scenario: Ordering less than 3k€/ 3 months



2. Scenario: Ordering exactly 3k€/ 3 months



3. Scenario: Ordering more than 3k€/ 3 months



Specializing in:

Thermoplastics

Thermosets

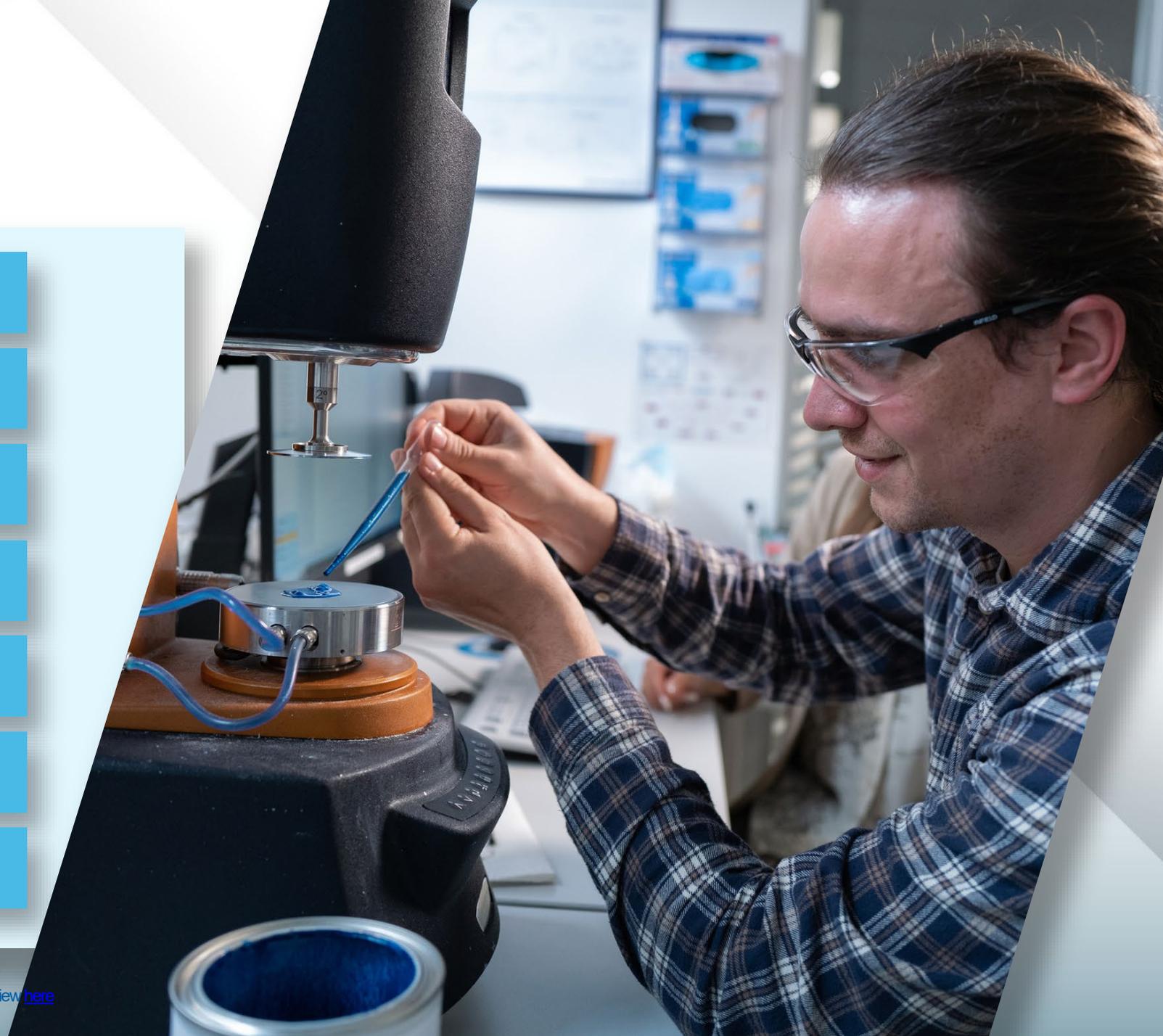
Elastomers

Ceramics

Metals

Composite Materials

Varnishes and Coatings



We Put Any Material to the Test

Standard Tests
(Mechanical &
Thermal Properties)

Industry-
Specific Tests

Parts Testing

Test BASF Forward AM materials or 3rd party materials to get a better understanding about their behavior.

Mechanical & Thermal Properties

Tensile test

Tear
resistance

3-point
bending test

Impact
resistance

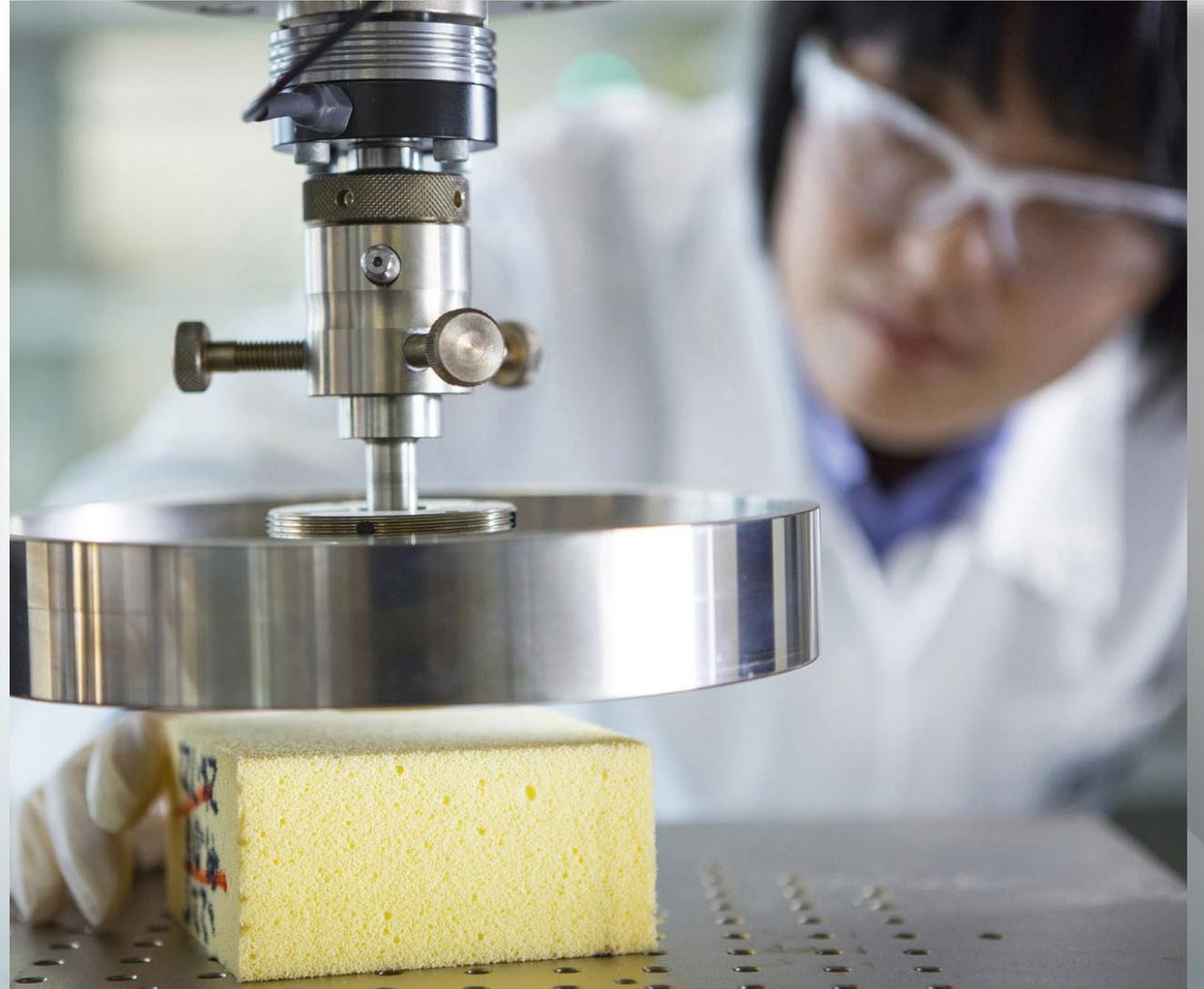
Compression
set
(elastomers)

Rebound
resilience
(Schob
pendulum)

Heat
resilience
(HDT &
Vicat)

DSC analysis

Dynamic
mechanical
analysis



Weathering

Light exposure

Salt spray tests (NSS test)

Environmental testing

Thermal storage

Hydrolysis storage



Consumer Products

Determination of compression properties (cyclic)

Rubber deterioration –
Cut Growth using
Ross Flexing Apparatus

Test for spectacle frames





Automotive

Thermal desorption analysis of organic emissions

Formaldehyde emissions

Fogging

Burning behavior of interior materials in motor vehicles

Railway/Aerospace

Limiting Oxygen Index (LOI) in %

Smoke optical density and toxicity

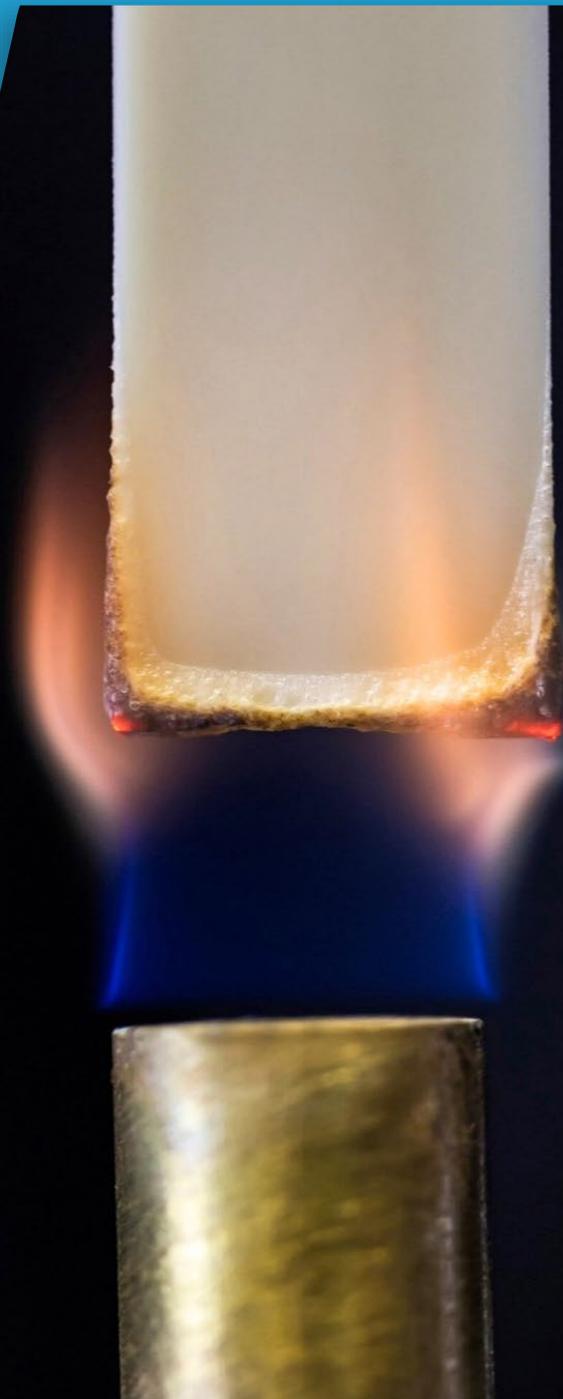
Horizontal burning test (UL)

Vertical/Horizontal bunsen burner (FAR)

Heat release test (OSU test)

Smoke density (FAR)

Smoke toxicity (AITM/BSS)





Medical Device

Cytotoxicity via neutralred-method
(In Vitro)

Sensibilization via LLNA (In Vivo)

Sensitization via KeratinoSens
according to OECD 442D (In Vitro)

Skin Irritation - epicutan test on human
skin with 10 or 30 test persons

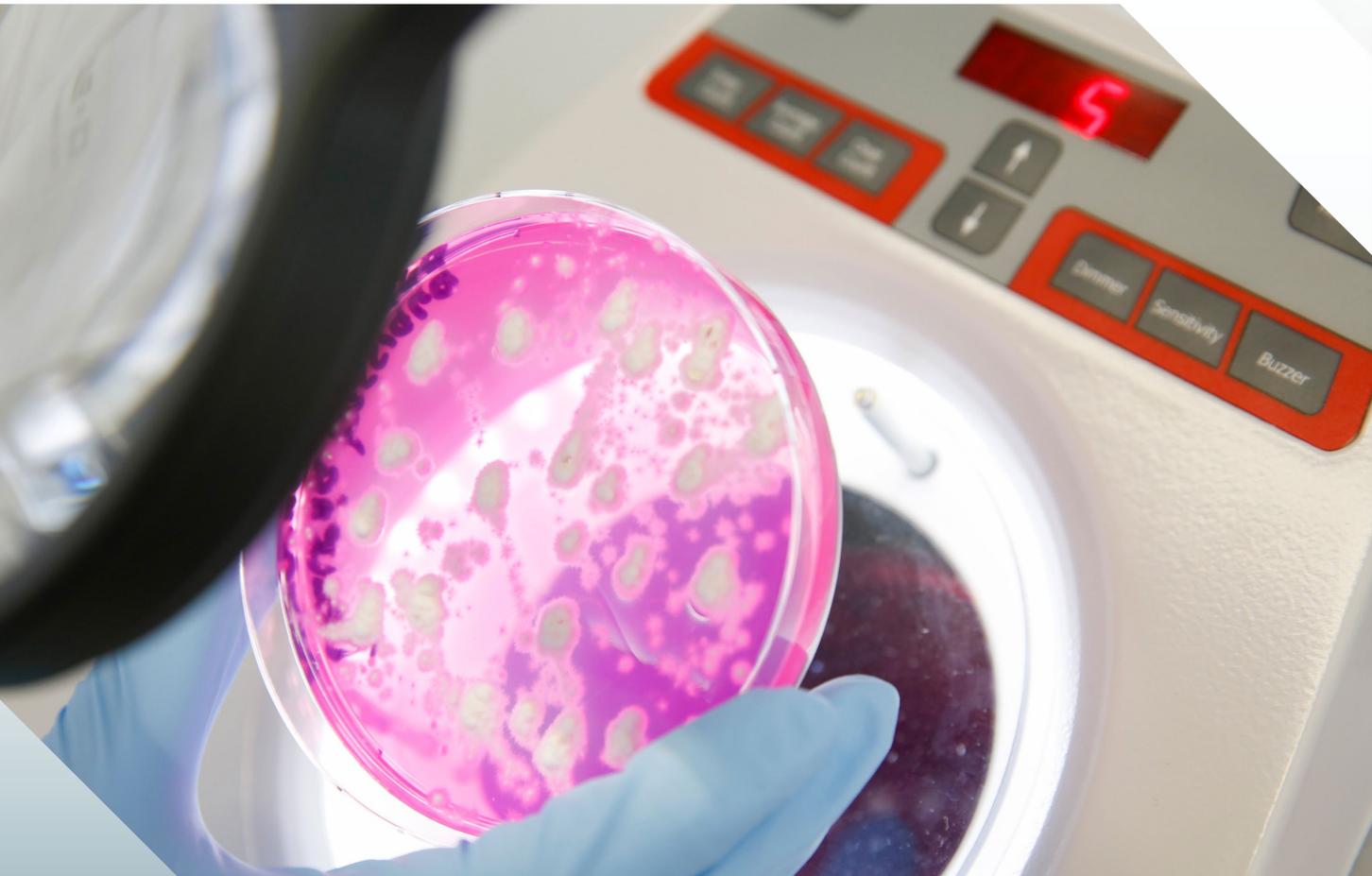
Microbiology

Quantitative determination of the bioburden

Antibacterial activity

Antiviral activity

Microorganisms on plastics



Food Contact

Global and specific migration of ingredients

Hygienic and microbiological tests of materials in contact with drinking water



Electronic Devices

Electrical volume resistivity

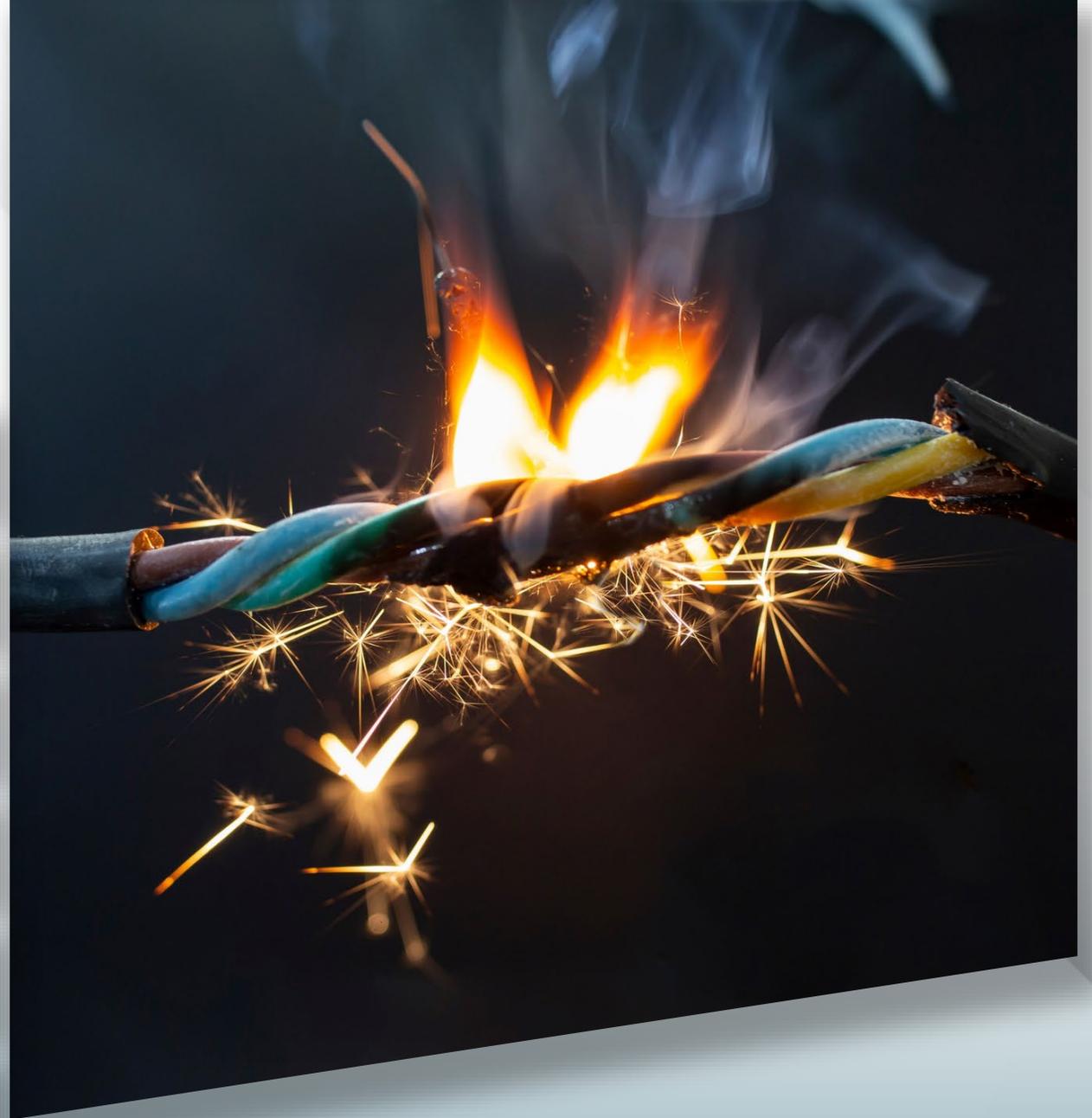
Dielectric strength

Comparative tracking index (CTI)

Vertical/Horizontal Burning-Test (UL)

Surface resistance and surface resistivity

Glow-wire flammability test



Varnish and Coatings

Martindale testing

Scratch resistance

Pull-off test for adhesion

Cross-cut test

Color fastness to rubbing



Dental

Orthodontic base polymers
DIN EN ISO 20795-2



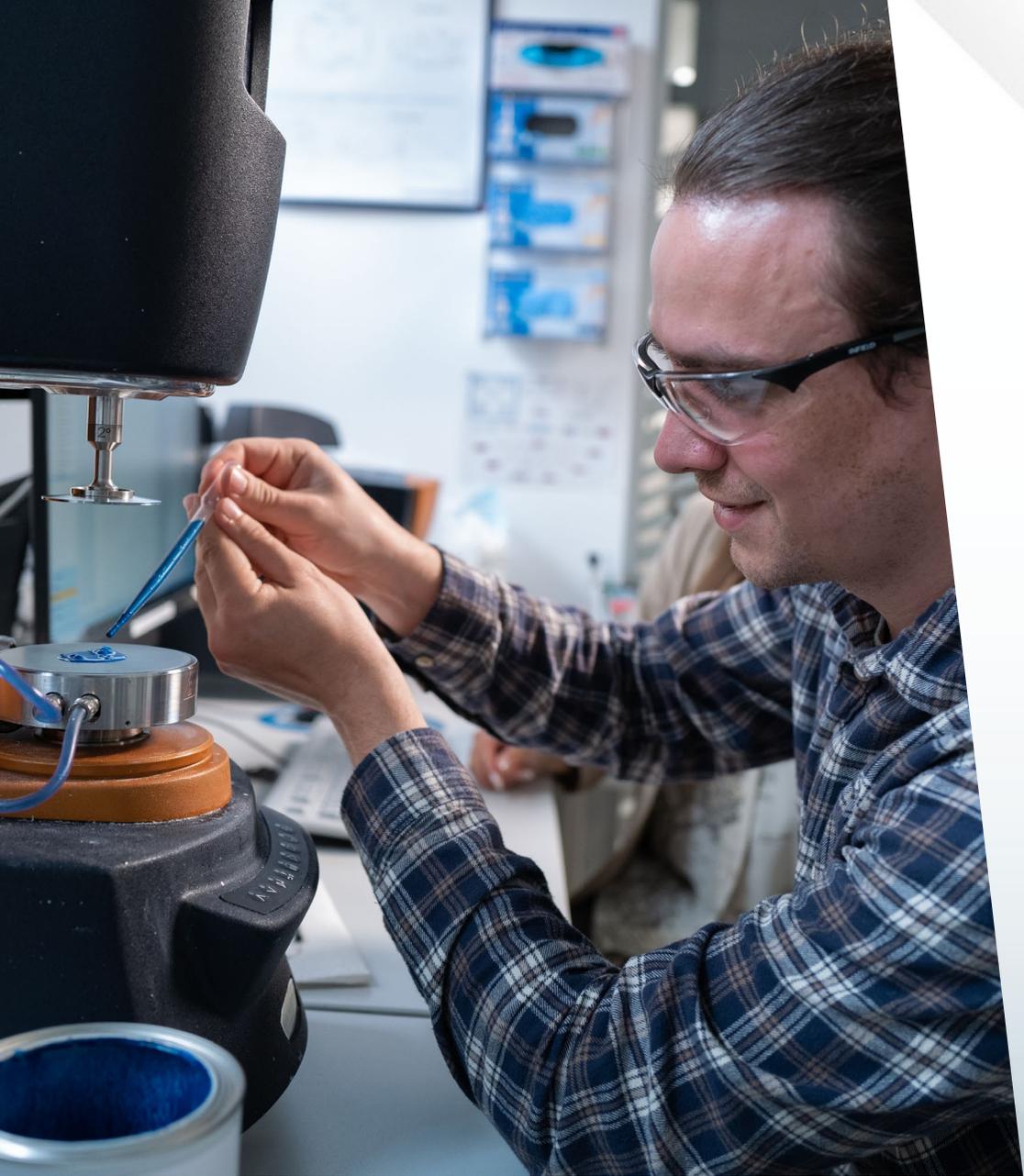


Parts Testing

Crash tests automotive bumper

Life-cycle tests footwear

Burst tests



Test.
Trust.
Print Excellence.

Any Questions? Contact Us!

Dr. Florian Fischer
Head of Service and Solutions

Marius Haefele
Product Manager Services

Giulia Knopf
Quality Control Lab Manager

Download full testing overview [here](#):

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 - **BASF**

We create chemistry



FORWARD AM

Innovating Additive Manufacturing