EMISSIONS AND ODOUR
IDENTIFYING AND REDUCING HAZARDOUS SUBSTANCES
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We put your materials and products to the test

TESTING MATERIALS WITH ALL SENSES

Testing and developing material is central to our work. The engineering of material and parts is combined with the sector of testing. The services of imat-uve gmbh are accredited according to DIN EN ISO/IEC 17025 as well as VDA 6.2 and ISO 9001 (headquarter) and are approved by many international car makers and suppliers. The branches in China and the U.S. also hold numerous OEM approvals. Our excellent experience allows us to determine customised material and component durability. Apart from tests for mechanical and chemical-reliability imat-uve uses test methods, which involve odour, visual and haptic testing.

ANALYSING EMISSIONS AND THEIR IMPACT

Material, e.g. plastics or rubber, might have polluting or even hazardous impact on the environment. Highly volatile hydrocarbons (VOC) as well as semi-volatile hydrocarbons (FOG/fogging) could cause serious health risks. To avoid any inconvenience or harm to the consumer, the automotive and building industries have decided to set up standard regulations and limit values for rife substances. The standard analysis comprises numerous tests for odour and emissions as well as fogging. imat-uve also provides knowledge about the legal regulations, locally and globally.
With imat-uve you will find a partner who is proficient in all relevant test specifications for material and component emissions of most automobile manufacturers in the world. And, at the same time, we can determine and assess the emission status of the overall vehicle and its interior. This applies to the volatile organic compounds (VOC) just as much as to the non-volatile hydrocarbons (FOG/fogging).

imat-uve offers the technical facilities and know-how for an overall vehicle assessment in accordance with the requirements of the globally harmonised ISO 12219-1, the Chinese HJ/T 400 as well as the specifications of JAMA for the Japanese market and the Korean MIST III. We also offer a competent preparation of vehicles for measurements. This includes logistical support for automobile manufacturers as well as equipping the vehicle’s interior with the necessary sensor systems and the corresponding control technology. Apart from know-how in overall vehicle measurements, you will also find competent support in identifying striking substances and odours from the materials used on a component and material level. You hereby benefit from the fact that imat-uve has steadily built up and extended a collection of material data over the past 15 years which can be used for not only considerations of laws relating to hazardous substances but also to link striking substances to possible material and component sources. We help you optimise your manufacturing processes and develop emission-improved materials, components and vehicles. You can even have access to our competent engineers and involve them temporarily in your own task-forces and project teams.

The test competency in the sector emission and odour tests on a material level is also applied in the examination of structural components. imat-uve operates several emission test chambers by Vötsch/Weiß with a test space volume of 0.25m³ up to 2m³. This allows the optimal (non-destructive) examination of most conventional component sizes and pre-products according to methods of VDA, ISO and CARB. The test results produced by imat-uve are accepted by most car manufacturers or are recommended and/or approved by OEMs. This includes highly volatile hydrocarbons (VOC) as well as semi-volatile hydrocarbons (FOG/fogging). imat-uve also plays a major role in motor vehicle odour test methods in connection with component emission tests in chambers, as well as the bag methods popular in the Asia-Pacific region.

Besides the accumulative values at VOC, the competencies of our engineers comprise the individual substance examination of VOC screenings, the amines and N-nitrosamines, the aldehydes and other carbonyl compounds and the phthalic acid esters (phthalates) required by some OEMs. Wherever required, we also classify detected individual substances in the VOC screening according to internationally relevant statutory hazardous goods regulations. As well as competencies in emission checks from non-metallic materials on a component and pre-product level, you will also find expert support for emission and odour checks from material samples and the entire vehicle.
imat-uve is engaging in research and development projects that deal with innovations of test methods and material optimisation. One of these projects is the development of a specific test equipment for olfactory tests with the University of Kassel. Its aim is to use the digital electroencephalography (EEG) to measure the perception of seating comfort concerning odour in a more objective way. Classic odour tests are designed to meet the subjective-individual evaluation by a single person or test collectives. The olfactory performance of individuals is subject to training effects, cognitive performance and strong individual variations of the sense of smell. To minimise the effects of suggestibility, in this project the sensory information is indirectly derived from the human cerebrum (cortex) by means of EEG.

To participate from its knowledge, imat-uve offers individual trainings and workshops to its clients. As far as emissions and odours are concerned, imat-uve organises the yearly event “Workshop: Emissions and odour of plastics” in Shanghai where experts in this sector gather for professional exchange and presenting innovations.

KNOWLEDGE TRANSFER / SHARING EXPERIENCE

imat-uve participates regularly in proficiency tests conducted by OEMs and independent organisations. The company is also approved by several Asian OEMs for the specific bag methods used in the Asia-Pacific region.
Emission chambers
- DIN EN ISO 16000-9
- DIN ISO 12219-4
- VDA 276
- GS 97014-2 (BMW)
- VCV 1027,2769 (Volvo)
- PP 3942 (Volkswagen/Audi)
- PPV 8015 (Porsche)
- PPV 6010 (Porsche)
- TPLR 52.527 (Volkswagen/Audi)
- TSLM 005 (Doevah)
- VCS 1027,2729 and STD 1027/2712 (Volvo)
- D10 5157 (PSA)
- TPLR 52.527 (Volkswagen/Audi)
- TPJLR 52.457 (Jaguar/Land Rover)

Methods for the analysis of specific substances and substance groups
- Carbonyl compounds (aldehydes and ketones)
- Phthalates / amines / N-nitrosamines
- Glycol ethers / Glycol esters

Overall vehicle emission tests
- ISO 12219-1
- HbT 400/200 (T 215/30)

Individual setup according to customer specifications
- Various sampling techniques, e.g. by heated sampling probe or by capillaries
- HC total concentration by means of a flame ionisation detector (FID)

Material emission VOC
- VDA 278, VDA 277
- PV 3015, PV 3925, PV 3341
- PPV 8015
- VDA 275 (Formaldehyde)
- DIN EN 13130-4 (1,2-Butadiene)
- DIN EN 13130-4 (1,3-Butadiene)

- ISO 12219-1
- HbT 400/200 (T 215/30)

Individual setup according to customer specifications
- Various sampling techniques, e.g. by heated sampling probe or by capillaries
- HC total concentration by means of a flame ionisation detector (FID)

Odour tests
- VDA 270 (various, e.g. Daimler, BMW)
- GS 97014-4 (BMW, along with chamber tests)
- PV 3900 (Volkswagen/Audi)
- PPV 5015 (Porsche)
- PPV 6010 (Porsche)
- TPJLR 52.457 (Jaguar/Land Rover)
- BMW PR 397
- GMW 3205, GME 60276 & 14131 (GM, Opel)
- FLM BO 131-01 and -03 (Ford)
- TSM 005 (Doevah)
- NC 1027/2712 and STD 1027/2712 (Volvo)
- D10 5157 (PSA)
- TPLR 52.527 (Volkswagen/Audi)
- MQC-TM 005 (Doevah)
- NES MO160 (Masani)
- SES N 2405 (Suzuki)

- ISO 12219-1
- HbT 400/200 (T 215/30)

Individual setup according to customer specifications
- Various sampling techniques, e.g. by heated sampling probe or by capillaries
- HC total concentration by means of a flame ionisation detector (FID)
Our services are certified according to DIN EN ISO 17025, ISO 9001 and VDA 6.2.

Read more: www.imat-uve.com