

THE LIST OF STUDIES THAT CAN BE PERFORMED AT THE TOXICOLOGY RESEARCH GROUP

1. Toxicological studies

- In vitro, ex vivo, in vivo* eye corrosion/ irritation studies**

Isolated chicken eye test method for identifying I) chemicals inducing serious eye damage, II) chemicals not requiring classification for eye irritation or serious eye damage.	<u>OECD No. 438/ EU B.48</u>
Short time exposure <i>in vitro</i> test method for identifying I) chemicals inducing serious eye damage II) chemicals not requiring classification for eye irritation or serious eye damage.	<u>OECD No. 491/EU B.68</u>
The test method used within the study on the model of reconstructed human cornea-like epithelium (RhCE), used for identifying chemicals not requiring classification and labelling for eye irritation or serious eye damage.	<u>OECD No. 492</u>
Reconstructed human cornea-like epithelium (RHCE) test method for eye hazard identification.	<u>OECD No. 492B</u>
Acute eye irritation/ eye corrosion test.	<u>OECD No. 405/EU B.5</u>

- In vitro, ex vivo, in vivo* skin corrosion/ irritation studies**

<i>In vitro</i> skin corrosion: transcutaneous electrical resistance test (TER).	<u>OECD No. 430/ EU B.40</u>
<i>In vitro</i> skin corrosion: reconstructed human epidermis (RHE) test method.	<u>OECD No. 431/ EU B.40</u>
<i>In vitro</i> skin irritation. The test on the model of reconstructed human epidermis.	<u>OECD No. 439/ EU B.46</u>
Acute skin irritation/ corrosion test.	<u>OECD No. 404/ EU B.4</u>
Biological evaluation of medical devices – Test for skin irritation <i>in vitro</i> .	ISO 10993-23

- In vitro, in chemico, in vivo* skin sensitisation studies**

Skin sensitisation: local lymph node assay (LLNA): BrdU-ELISA.	<u>OECD No. 442B/EU B.51</u>
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<i>In chemico</i> skin sensitisation, direct peptide reactivity assay (DPRA).	OECD No. 442C/ EU B.59
<i>In vitro</i> skin sensitisation: the test method with use of ARE-Nrf2 Luciferase.	OECD No. 442D/ EU B.60
<i>In vitro</i> skin sensitisation: Human cell line activation test (H-CLAT).	OECD No. 442E/ EU B.71
Skin sensitisation study.	OECD No. 406/ EU B.6
Delayed hypersensitivity assessment test using the closed-patch method (Buehler Test).	ISO 10993-10

- ***In vitro* cytotoxicity studies**

<i>In vitro</i> cytotoxicity test.	ISO 10993-5
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- ***In vitro* phototoxicity**

Phototoxicity - <i>In vitro</i> 3T3 NRU phototoxicity test.	OECD No. 432
<i>In vitro</i> Phototoxicity - Reconstructed Human Epidermis Phototoxicity test method.	OECD 498

- ***In vitro, in vivo* studies identifying endocrine-disrupting substances**

Stably Transfected Human Estrogen Receptor- α Transactivation Assay for Detection of Estrogenic Agonist and antagonist Activity of Chemicals using the hER α -HeLa-9903 cell line.	OECD No. 455
Uterotrophic Bioassay in Rodents A short-term screening test for oestrogenic properties.	OECD No. 440/ EU B.54
Hershberger bioassay in rats. Short-term screening test of (anti-) androgenic properties.	OECD No. 441/ EU B.55

- ***In vitro, in vivo* acute toxicity**

Use of the 3T3 neutral red uptake cytotoxicity test to estimate starting doses for acute oral systemic toxicity tests.	OECD Series on Testing and Assessment No. 129 (2010) (ENV/JM/MONO(2010)20)
Acute oral toxicity test.	OECD No. 420/ EU B.1.BIS
Acute oral/ intraperitoneal/ subcutaneous/ intravascular toxicity test - acute toxic class method.	OECD No. 423/ EU B.1.TRIS
Acute dermal toxicity test.	OECD No. 402/ EU B.3



Acute inhalation toxicity test.	<u>OECD No. 403</u>
Acute inhalation toxicity – acute toxic class method.	<u>OECD No. 436/ EU B.52</u>
Maximum tolerated dose test (MTD).	-
Single dose toxicity study in rodents.	ISO 10993-11

- ***In vivo subacute, subchronic and chronic studies***

Dose range finding test (DRF).	-
Repeated dose 28-day oral/ intraperitoneal/ subcutaneous toxicity study in rodents.	<u>OECD No. 407/ EU B.7</u>
Repeated dose dermal toxicity: 21/ 28 day study.	<u>OECD No. 410/ EU B.9</u>
Repeated dose 90-day oral toxicity study in rodents.	<u>OECD No. 408/ EU B.26</u>
Subchronic dermal toxicity: 90-day study.	<u>OECD No. 411/ EU B.28</u>
Chronic toxicity studies.	<u>OECD No. 452/ EU B.30</u>
Combined chronic toxicity/ carcinogenicity studies.	<u>OECD No. 453/ EU B.33</u>

- ***In vivo neurotoxicity studies***

Neurotoxicity study in rodents.	<u>OECD No. 424/ EU B.43</u>
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- ***In vivo developmental and reproduction studies***

Prenatal developmental toxicity study.	<u>OECD No. 414/ EU B.31</u>
Reproduction/ developmental toxicity screening test.	<u>OECD No. 421</u>
Combined repeated dose toxicity study with the reproduction/ developmental toxicity screening test.	<u>OECD No. 422</u>
Extended one-generation reproductive toxicity study in rats.	<u>OECD No. 443/ EU B.56</u>
Two-generation reproduction toxicity study.	<u>OECD No. 416/ EU B.35</u>

- ***In vitro, in vivo genotoxicity studies***

Bacterial reverse mutation test (AMES test, microplate format).	<u>OECD No. 471/ EU B.13/14</u>
<i>In vitro</i> micronucleus test on the mammalian cell line.	<u>OECD No. 487/ EU B.49</u>
<i>In vitro</i> mammalian cell gene mutation tests using the HPRT genes.	<u>OECD No. 476/ EU B.17</u>



<i>In vivo</i> mammalian erythrocyte micronucleus test.	<u>OECD No. 474/ EU B.12</u>
<i>In vivo</i> mammalian cell gene mutation test using the thymidine kinase gene.	<u>OECD No. 490/ EU B.67</u>
<i>In Vivo</i> Mammalian Alkaline Comet Assay	<u>OECD No. 489</u>

***In vivo* carcinogenicity studies**

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Carcinogenicity studies.	<u>OECD No. 451/ EU B.32</u>
Combined chronic toxicity/ carcinogenicity studies.	<u>OECD No. 453/ EU B.33</u>

• ***In vivo* local tolerance studies**

Local tolerance test.	<u>EMA/CHMP/SWP/2145/2000, ISO 10993-10</u>
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• **Toxicokinetics/pharmacokinetics studies**

Toxicokinetics/pharmacokinetics study.	<u>OECD No. 417/ EU B.436/ ICH S3A</u>
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• **Other services:**

- ✓ Toxicological studies conducted according to the procedures agreed with the customer
- ✓ Haematological studies
- ✓ Biochemical studies
- ✓ Hormone identification
- ✓ Tissue and organ collection
- ✓ Preparing histopathology slides and their scanning



LIST OF STUDIES THAT CAN BE PERFORMED AT THE ECOTOXICOLOGY RESEARCH GROUP

1. Aquatic toxicity studies

Freshwater algae and cyanobacteria, growth inhibition test.	<u>OECD No. 201/ EU C.3</u>
<i>Lemna sp.</i> growth inhibition test.	<u>OECD No. 221 / EU C.26</u>
Sediment-free <i>Myriophyllum spicatum</i> toxicity test.	<u>OECD No. 238</u>
Water-sediment (<i>Myriophyllum spicatum</i>) macrophytes <i>spicatum</i> toxicity test.	<u>OECD No. 239</u>
<i>Daphnia magna</i> , acute immobilisation test.	<u>OECD No. 202/ EU C.2</u>
<i>Daphnia magna</i> reproduction test.	<u>OECD No. 211/ EU C.20</u>
Sediment-water chironomid toxicity using spiked sediment.	<u>OECD No. 218/ EU C.27</u>
Sediment-water chironomid toxicity using spiked water..	<u>OECD No. 219/ EU C.28</u>
Sediment-water chironomid life-cycle toxicity test using spiked water or spiked sediment	<u>OECD No. 233/ EU C.40</u>
<i>Chironomus sp.</i> , acute immobilisation test.	<u>OECD No. 235</u>
Fish Cell Line Acute Toxicity - The RTgill-W1 cell line assay.	<u>OECD No. 249</u>
Fish embryo acute toxicity (FET) test.	<u>OECD No. 236</u>
Fish, acute toxicity test.	<u>OECD No. 203/ EU C.1</u>
Fish, early-life stage toxicity test.	<u>OECD No. 210</u>
Fish, short-term toxicity test on embryo and sac-fry stages.	<u>OECD No. 212/ EU C.15</u>
Fish, juvenile growth test.	<u>OECD No. 215/ EU C.14</u>
Bioaccumulation in fish: aqueous and dietary exposure.	<u>OECD No. 305/ EU C.13</u>
21-day fish assay: a short-term screening for oestrogenic and androgenic activity in zebrafish.	<u>OECD No. 230/ EU C.37</u>

2. Toxicity studies for soil organisms

Terrestrial plant test, seedling emergence and seedling growth test.	<u>OECD No. 208</u>
Terrestrial plant test, vegetative vigour test.	<u>OECD No. 227</u>
Earthworm, acute toxicity test.	<u>OECD No. 207/ EU C.8</u>
Earthworm, reproduction test.	<u>OECD No. 222</u>
Collembolan, reproduction test in soil.	<u>OECD No. 232</u>



Predatory mite <i>Hypoaspis</i> (<i>Geolaelaps</i>), reproduction test in soil.	<u>OECD No. 226</u>
Soil microorganisms: nitrogen transformation test.	<u>OECD No. 216/ EU C.21</u>
Soil microorganisms: carbon transformation test.	<u>OECD No. 217/ EU C.22</u>

3. Toxicity tests for pollinators and beneficial arthropods

Honeybees, acute oral toxicity test.	<u>OECD No. 213/ EU C.16</u>
Honeybees, acute contact toxicity test.	<u>OECD No. 214/ EU C.17</u>
Honeybees, larval toxicity test, single exposure.	<u>OECD No. 237</u>
Honeybees, larval toxicity test, repeated exposure	<u>OECD GD 239</u>
Honeybees, chronic oral toxicity test (10-day feeding).	<u>OECD No. 245</u>
Bumblebees, acute oral toxicity test.	<u>OECD No. 247</u>
Bumblebees, acute contact toxicity test.	<u>OECD No. 246</u>
Study of honeybees' flight ability to return to the hive after a single oral exposure to sublethal doses of chemicals.	<u>OECD No. 332</u>
A laboratory test or extended laboratory test for evaluating the effects of plant protection products on the parasitic wasp, <i>Aphidius rhopalosiphi</i> De Stephani-Perez.	SETAC; ESCORT I, ESCORT II; IOBC/BART/EPPO
A laboratory test or extended laboratory test for evaluating the effects of plant protection products on the predatory mite, <i>Typhlodromus pyri</i> Scheuten.	SETAC; ESCORT I, ESCORT II; IOBC/BART/EPPO
A laboratory test for evaluating the effects of plant protection products on the spider, <i>Pardosa</i> .	SETAC; ESCORT I, ESCORT II; IOBC/BART/EPPO
A laboratory test or extended laboratory test for evaluating the effects of plant protection products on the seven spotted ladybird beetle, <i>Coccinella septempunctata</i> L.	ESCORT 1, ESCORT 2, IOBC, BART, EPPO
A laboratory test or extended laboratory test for evaluating the effects of plant protection products on the green lacewing, <i>Chrysoperla carnea</i> .	ESCORT 1, ESCORT 2, IOBC, BART, EPPO
Aged residue test on the parasitic wasp, <i>Aphidius rhopalosiphi</i> De Stephani-Perez.	ESCORT 1, ESCORT 2, IOBC, BART, EPPO
Aged residue test on the predatory mite, <i>Typhlodromus pyri</i> Scheuten.	ESCORT 1, ESCORT 2, IOBC, BART, EPPO



Aged residue test on the seven spotted ladybird beetle, <i>Coccinella septempunctata</i> L.	ESCORT 1, ESCORT 2, IOBC, BART, EPPO
Aged residue test on the green lacewing, <i>Chrysoperla carnea</i> .	ESCORT 1, ESCORT 2, IOBC, BART, EPPO

4. Fate and behaviour in the environment

Ready biodegradability.	OECD No. 301D/ EU C.4-E; OECD No. 301F/ EU C.4-D
Inherent biodegradability: Zahn-Wellens/ EMPA test.	<u>OECD No. 302B/ EU C.9</u>
Activated sludge, respiration inhibition test.	<u>OECD No. 209/ EU C.11</u>
Aerobic and anaerobic transformation in soil.	<u>OECD No. 307/ EU C.23</u>
Leaching in soil columns.	<u>OECD No. 312</u>
Development and validation of an analytical method in water, soil, sediments and plant and animal materials.	SANTE
Determination of the residues of chemical substances in water, soil, sediment, plant and animal materials.	SANTE/2020/12830
Stability of pesticide residues in stored commodities.	<u>OECD No. 506</u>
Bioaccumulation in Terrestrial Oligochaetes.	<u>OECD No. 317</u>

5. Physical and chemical properties

Water solubility.	<u>OECD No. 105/ EU A.6</u>
Solubility in organic solvents.	<u>CIPAC MT 181</u>
Adsorption - desorption using batch equilibrium method.	<u>OECD No. 106/ EU C.18</u>
Partition coefficient (n-octanol/water): shake flask method.	<u>OECD No. 107/ EU A.8</u>
Hydrolysis as a function of pH.	<u>OECD No. 111/ EU C.7</u>
Partition coefficient (n-octanol/water), HPLC method.	<u>OECD No. 117</u>
Estimation of the adsorption coefficient (K_{oc}) on soil and on sewage sludge using high performance liquid chromatography (HPLC).	<u>OECD No. 121/ EU C.19</u>



6. Avian toxicology

Avian dietary toxicity test	<u>OECD No. 205</u>
Avian acute oral toxicity test	<u>OECD No. 223</u>
Avian repellency test	<u>OECD draft</u>

7. Ecosystem structure study

Simulated freshwater lentic field test (outdoor microcosms and mesocosms)	<u>OECD GD 53,</u> <u>ENV/JM/MONO(2006)17</u>
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