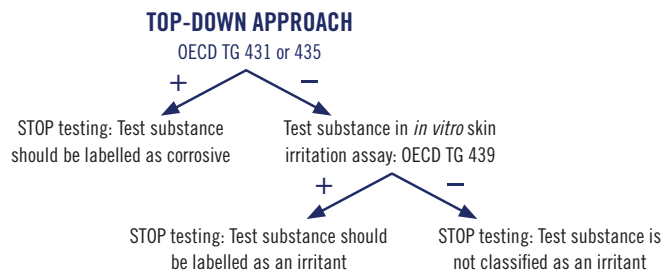
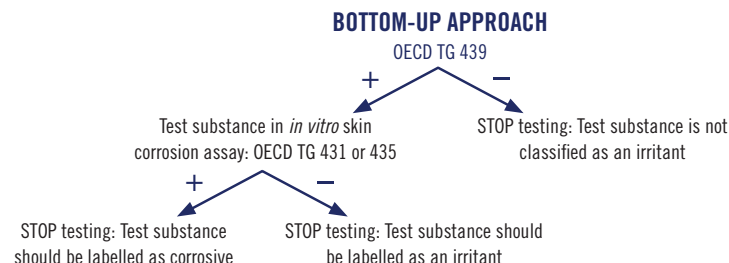


# IN VITRO METHODS FOR PREDICTING SKIN IRRITATION AND CORROSION

START here if you suspect your test substance is corrosive



START here if you suspect your test substance is not corrosive



METHOD	PRINCIPLE OF THE TEST	RHE MODEL (IF APPLICABLE)	APPLICABILITY DOMAIN	GHS CATEGORISATION
<b>OECD TG 439: In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method</b>	Test substance is applied to a 3-dimensional reconstructed human epidermis (RHE) model. Following exposure and a post-exposure incubation period, the vital dye MTT is added and cell viability determined. Optional histology may also be conducted to gain further information.	<ul style="list-style-type: none"> <li>• EpiSkin™ (L'Oréal, France)</li> <li>• EpiDerm™ (MatTek, US)</li> <li>• SkinEthic™ (L'Oréal, France)</li> <li>• LabCyte EPI-MODEL24 (J-TEC, Japan)</li> <li>• epiCS® (Phenion, Germany)</li> <li>• Skin+™ (Sterlab, France)</li> </ul>	Applicable to solids, semi-solids, liquids, waxes, and mixtures	Discriminates skin irritants (Cat 2) from substances not classified for skin irritation (No Cat). Materials that test positive should be tested for skin corrosion (bottom-up approach).
<b>OECD TG 431: In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method</b>	Test substance is applied topically to a 3-dimensional RHE model. Corrosive chemicals are able to penetrate the tissue and are cytotoxic to cells in the underlying layers. Cell viability is measured using the vital dye MTT.	<ul style="list-style-type: none"> <li>• EpiSkin™ (L'Oréal, France)</li> <li>• EpiDerm™ (MatTek, US)</li> <li>• SkinEthic™ (L'Oréal, France)</li> <li>• epiCS® (Phenion, Germany)</li> <li>• LabCyte EPI-MODEL24 (J-TEC, Japan)</li> </ul>	Applicable to solids, semi-solids, liquids, waxes, and mixtures	Discriminates non-corrosive substances from corrosive substances (Cat 1) and allows subcategorisation into 1A or 1B and 1C together. Materials that test negative should be tested for skin irritation (top-down approach).
<b>OECD TG 435: In Vitro Membrane Barrier Test Method for Skin Corrosion</b>	Test substance is applied to the surface of an artificial membrane barrier designed to respond in a manner similar to skin <i>in vivo</i> . The time taken for the test substance to penetrate the barrier predicts corrosivity.	N/A	Applicable to solids, liquids, and emulsions. Aqueous chemicals with a pH in the range of 4.5 to 8.5 may not qualify for testing	Discriminates non-corrosive substances from corrosive substances and allows full subcategorisation into 1A, 1B, and 1C.

## References

- OECD. New guidance document on an integrated approach on testing and assessment (IATA) for skin corrosion and irritation. Series on Testing and Assessment, No 203. July 2014 (available at [www.oecd.org](http://www.oecd.org)).
- European Chemicals Agency. 2017. Guidance on information requirements and chemical safety assessment. Chapter R.7a: Endpoint specific guidance. Version 6.0. See R.7.2.
- PETA Science Consortium International. *In vitro* methods for skin irritation and corrosion testing. Training tool (available at [ThePSCI.eu/skin-in-vitro/](http://ThePSCI.eu/skin-in-vitro/)).