

Paris Session 2022



Prevention of use of SVHC in power transmission equipment

SC C3 Power System Environmental
Performance - PS1 Question PS1.17

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Question 1.17. Greenhouse effect and Life Cycle impacts aren't the only grid concerns and other aspect should be taken into account under an SDG perspective. Can the authors discuss which strategies can be implemented to prevent the use or the dispersion of Substances of Very High Concerns?



The SDGs were set up in 2015 by the [United Nations General Assembly](#) (UN-GA) and are intended to be achieved by 2030.

The 17 SDGs are: No poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, **affordable and clean energy**, decent work and economic growth, industry, innovation and infrastructure, Reduced Inequality, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life On Land, Peace, Justice, and Strong Institutions, Partnerships for the Goals.

Substance of Very High Concern <https://echa.europa.eu/candidate-list-table>

- **Environmental, Health and Safety aspects are a critical factor during the development and registration of new chemicals**

Prior to introducing new chemicals into commerce, chemicals are subject to regulation policies to address their potential impacts on both human health and the environment



REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals in the EU



K-REACH – Act on the Registration and Evaluation of Chemicals in South Korea



TSCA – Toxic Substances Control Act, Chemical Substance Inventory in the USA



ENCS – Existing and New Chemical Substances in Japan



IECSC – Inventory of Existing Chemical Substances in China

- **Specific test requirements can be dependent on production volume and results of previous tests.**
- **Authorities have ability to place restrictions on use of chemicals or even ban their use if it is deemed the risks cannot be adequately managed.**

Example of REACH regulation

- REACH requires all companies manufacturing or importing chemical substances into the European Union in quantities of one ton or more per year to register these substances with the European Chemicals Agency.
- The necessary content of the registration dossiers depends on volume bands (Annex VII : 1 to 10 tons/y; VIII : 10 to 100 tons/y; IX).
- Long and complex process to get chemicals registered.



- Handling management under scrutiny at IEC and Cigre.

Test end-point		Test protocol	EC 1907/2006	Annex VII	Annex VIII
Skin irritation or corrosion	In vitro	OECD 431	8.1 (VII)	X	
Skin irritation or corrosion	In vivo	OECD 404	8.1 (VIII)		X
Eye irritation	In vitro	OECD 437 (BCOP)	8.2 (VII)	X	
Eye irritation	In vivo	OECD 405	8.2 (VIII)		X
Skin sensitisation (LLNA)	In vivo	OECD 429	8.3 (VII)	X	
Mutagenicity (Bacterial Reverse Mutation Assay)	In vitro	OECD 471	8.4.1 (VII)	X	
Acute toxicity – oral	In vivo	OECD 420 / 423 / 425	8.5.1 (VII)	X	
Acute toxicity – inhalation	In vivo	OECD 403	8.5.2 (VIII)	X (exposure)	X
Acute toxicity – dermal	In vivo	OECD 402	8.5.3 (VIII)		X (exposure)
Repeat dose toxicity (28 day)	In vivo	OECD 412	8.6.1 (VIII)		X
Mammalian chromosome aberration test	In vitro	OECD 473	8.4.2 (VIII)		X
Mammalian cell gene mutation test – Mouse lymphoma assay	In vitro	OECD 476	8.4.3 (VIII)		X
Reproductive toxicity	In vivo	OECD 421 / 422	8.7.1 (VIII)		X
Toxicokinetics	Assessment		8.8.1 (VIII)		X