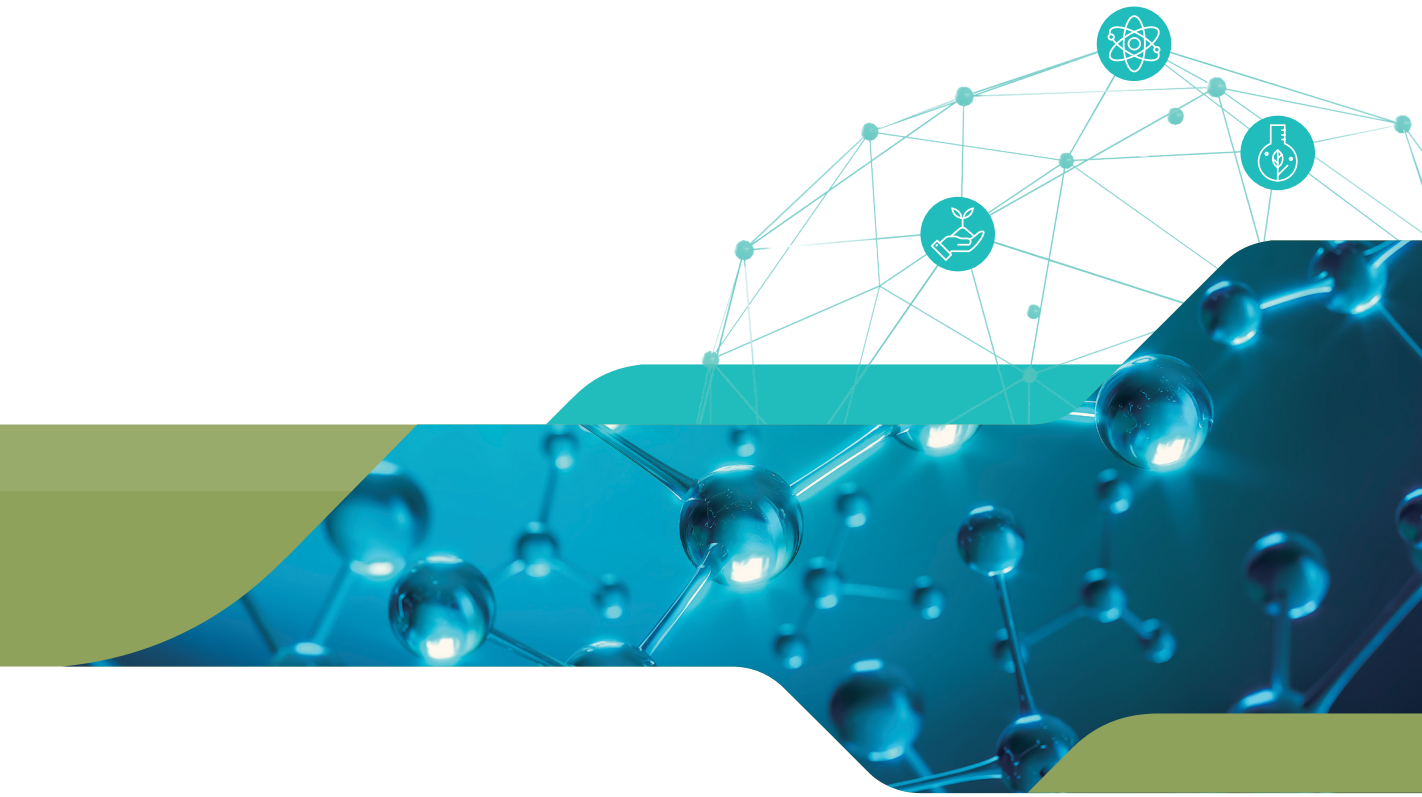
CHEMSOLVE

Professional Consultation on Chemical Substances

(Risk Assessment and Regulatory Services/ESG Consulting)

www.chem-solve.com



CHEMSOLVE

Chemsolve Co., Ltd., since 2017, has been devotedly providing clients the most professional chemical registration and evaluation consultancy services, while having grown into one of Korea's leading customized chemical consultancy firms. Moreover, for years, we have been undertaking chemical/drug/pesticide toxicity/exposure and risk assessments at the Korea Institute of Toxicology (KIT) affiliated with the Korea Research Institute of Chemical Technology (KRICT); the Ministries of Environment, Food and Drug Safety, Science and ICT, with which at the same time frequently implementing environmental and human hazard tasks, notably of industrial chemicals. Chemsolve, in the last five years, has addressed environmental concentration forecasting through emissions prediction and the multi-media fate model development and application. QSAR methods and read-across prediction of physicochemical properties and toxicity values are also major areas of specialization.

Chemsolve upholds its total dedication to client relationships and professionalism, sincerity, and transparency. We are always acutely apprised of K-REACH, K-BPR, and international chemical substance regulation trends and unexpected amendments and revisions vis-a-vis the United States, Europe, Japan, and China, and promptly respond on behalf of our clients in providing a successful outcome. We go the extra mile to maintain open communication with our clients to guarantee that we continuously provide custom-based consultancy services you value. We thank you for entrusting your business to us and considering our consultancy services for the future.

Yong-Ju Lee

President and CEO, Chemsolve Co., Ltd.

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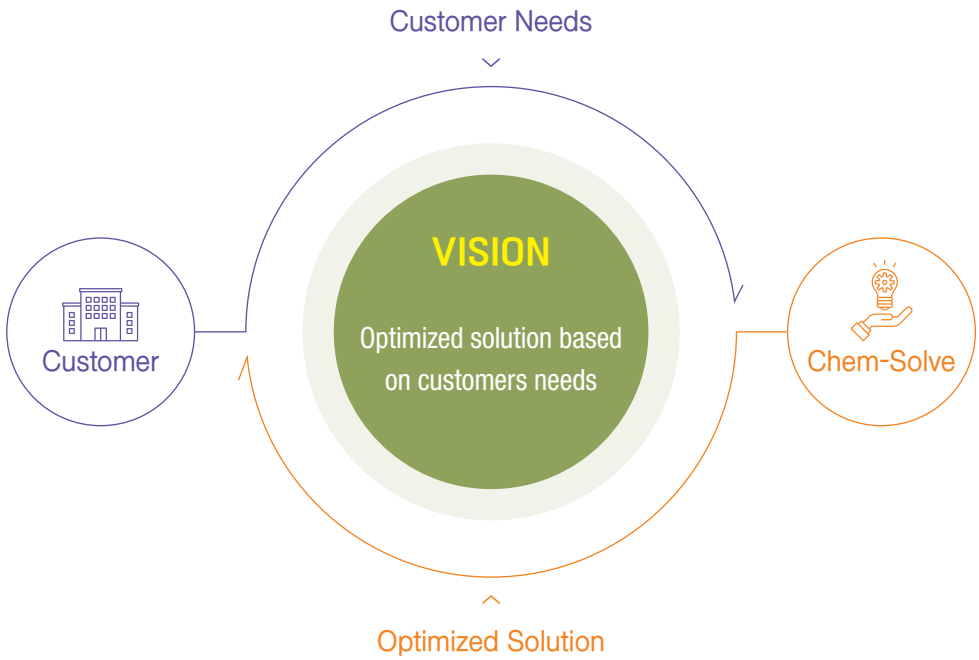
CHEMSOLVE

CHEMSOLVE, based on our expertise in chemical substances, mainly provides chemicals risk assessment report preparation and relevant consultation services in relation to the Korean Act on Registration Evaluation, etc. of Chemicals (K-REACH), and relevant consultation service for approval of Active Substances and Biocidal products in relation to Korea Biocidal Products Regulation (K-BPR). In addition, Chemsolve also deals with up-to-date overseas regulations and ESG consulting especially on the risk assessment for chemicals in production.



01 Registration and evaluation of chemical substances (K-REACH)

02 Approval of active substances and biocidal products (K-BPR)

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Yong-Ju Lee

Ph.D in Engin

CEO

Dr. Yong-Ju, Lee as a risk assessment expert, has abundant experience in leading environmental risk assessment research projects for government ministries such as the Ministry of Environment and the Ministry of Industry. She received her M.S. in Environmental Engineering from UCLA, and her Ph.D. in Engineering from Seoul National University Graduate School of Environmental Sciences; she has performed chemical/drug/pesticide/toxic exposure and risk assessments at the Korea Institute of Toxicology (KIT) affiliated with the Korea Research Institute of Chemical Technology (KRICT). Her expertise lies in chemical and biocide exposure assessments, while additionally performing numerous government projects and overseeing risk assessments for K-REACH and Biocidal Act response.

Jee-Hey Song

Ph.D in Environmetal

Principal Consultant

Dr. Jeehey Song, a risk assessment expert, received her Ph.D. in Environmental Engineering from Seoul National University in 2017. She is a researcher involved in numerous national projects related to chemical exposure, notably participating in K-CHESAR (Korea Chemical Safety Assessment and Reporting tool) development. Accordingly, her experience working in the Korea Institute of Production Technology and the private sector, enables her to provide professionalized and customized solutions to clients' needs. She currently serves as an advisor to the Graduate Curriculum Specializing in Industrial Fine Dust Reduction and Chemical Safety Management, where she works as a Professional Personnel Training Business Lecturer for the Ministry of Employment and Labor National Human Resource Development Consortium.

Sang-Ho Kim

Ph.D in Science

Advisor

Dr. Sang-Ho Kim is one of Korea's foremost nano materials experts with considerable industrial and academic experience in diverse materials. From 2010 to 2021, he successfully founded and led SG Flexio as CEO, while working as a tenured professor in the Department of Chemistry at Kongju National University. Previously, he worked at LG Chem and Hewlett-Packard Labs, upon which he led and conducted materials commercialization research. Since 2022, he has been Chemsolve's acting senior advisor on the chemical characterization of hazardous substances in chemicals.

Do-Won Kim

PhD in Environmental Science

Advisor

Dr. Do-won Kim is a circular economy expert and has experience in performing resource recycling consulting in various industries such as energy, chemical, material, and food. He received his bachelor's and master's degrees from the Department of Chemical Engineering at Seoul National University, and a doctorate in environmental science and an MBA from the Univ. of East Anglia (UK) majoring in industrial ecology. Worked at SK Innovation for 15 years and participated in Korea-Europe energy/environment international cooperation activities in the UK as a representative of the European Energy Environment Expert Forum , a member of the European Global Technical Cooperation Support Group (K-TAG), and a member of the Eurostars IEP. Returning to Korea in early 2022, he is focusing on resource recycling and ESG Consulting.

Steve Cervantes

Vice President, International marketing

Steve Cervantes, Vice President of Chemsolve Korea. Steve received his BA and MA in History and Economy respectively. Upon graduation, he received a Henry Luce Fellowship where he worked in numerous public policy related "think tanks" in Manila, Philippines. Thereafter, he worked in marketing positions with several MNCs throughout South and Northeast for several years. In 2005, Steve joined Konkuk University's (Seoul, Korea) International Trade Department and taught International Marketing and Business for 16 years. While there he worked as a consultant for chemical and nanotechnology associated firms. Steve finally became the Vice President of Marketing at Chemsolve Korea in which he is marketing Chemsolve's services globally.

A. B. V. Kiran Kumar

Principal Consultant

Dr. A.B.V. Kiran Kumar has 15 years of post-Ph.D. experience in nanomaterials and chemistry research and development. He is an innovator and entrepreneur. He has a PhD in synthetic organic chemistry and is an expert in a number of areas, including nanomaterials, biomaterials, polymers, and chemicals. 15 master's and one PhD students under his supervision are all skilled in research. He has national and international collaborates. He filed 4 patents and 40 articles published in peer-reviewed journals.

He received his MBE from the Indian Institute of Management in Kozikode. He is a Fellow Member of the RRMA (Regulatory Representatives and Managers Association).He is knowledgeable about all facets of business and the impact of global chemical regulations on the chemical supply chain and industry.

14 cases

Government and Public Institution Cooperation Projects

- Development of intelligent exposure, risk assessment technology and personalized risk information provision platform when using household chemical products
- Advancement of safety evaluation techniques for Biocide exposure risk assessment
- Development of green environmental technology for establishing information on chemical-accident-environmental-damage diagnosis
- Project with major companies product stewardship reports and chemical product management systems

200+ cases

Chemical Registration and Exemption

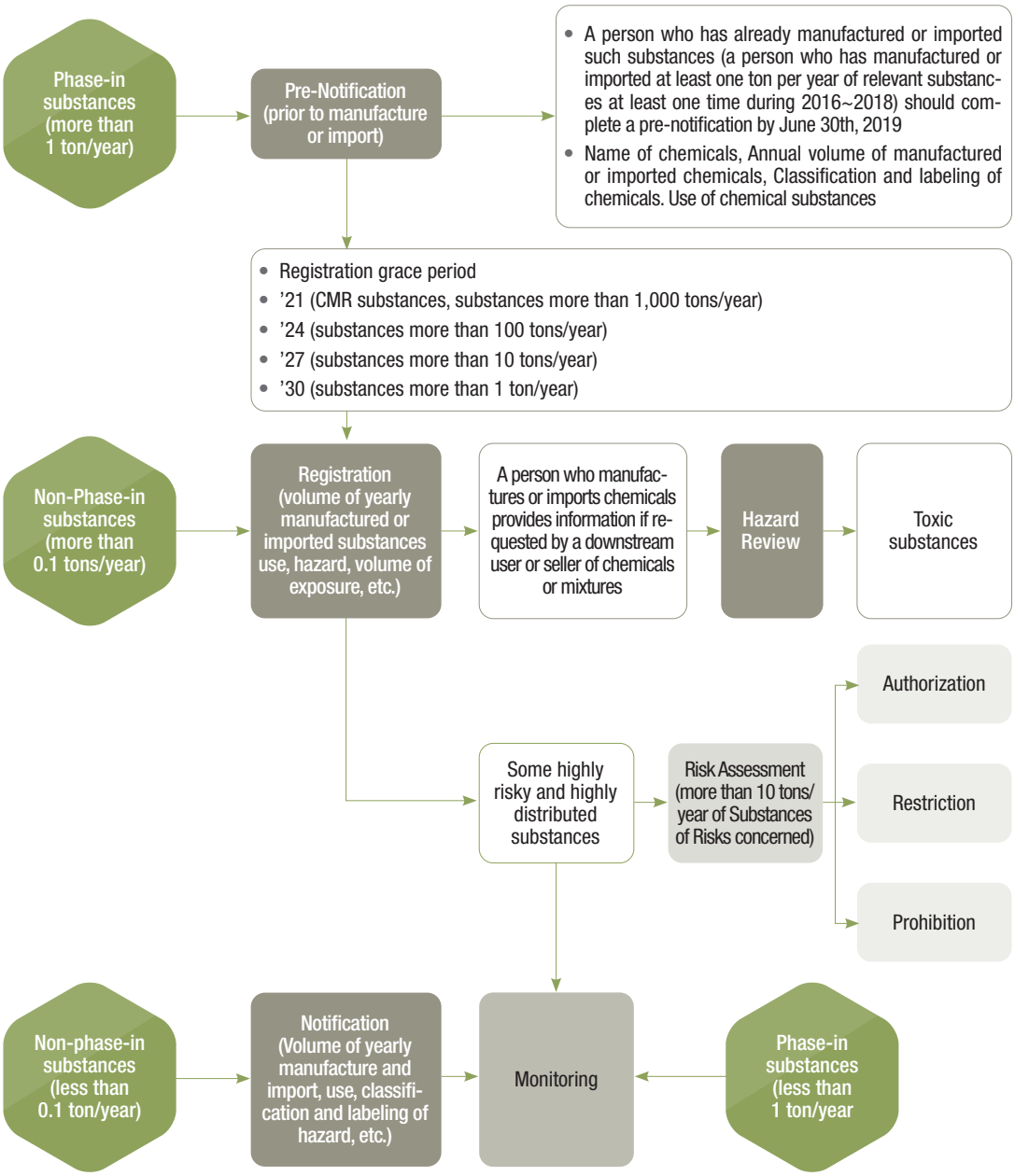
- Entire small and medium-sized businesses Joint Registration process support project
- Consultation service for exemption from registration of substances under K-REACH
- Agency service for Registration and Evaluation of Chemical Substances
- Whole biocidal substances/products approval process support project
- Consulting service for application for approval of biocidal substances

200+ cases

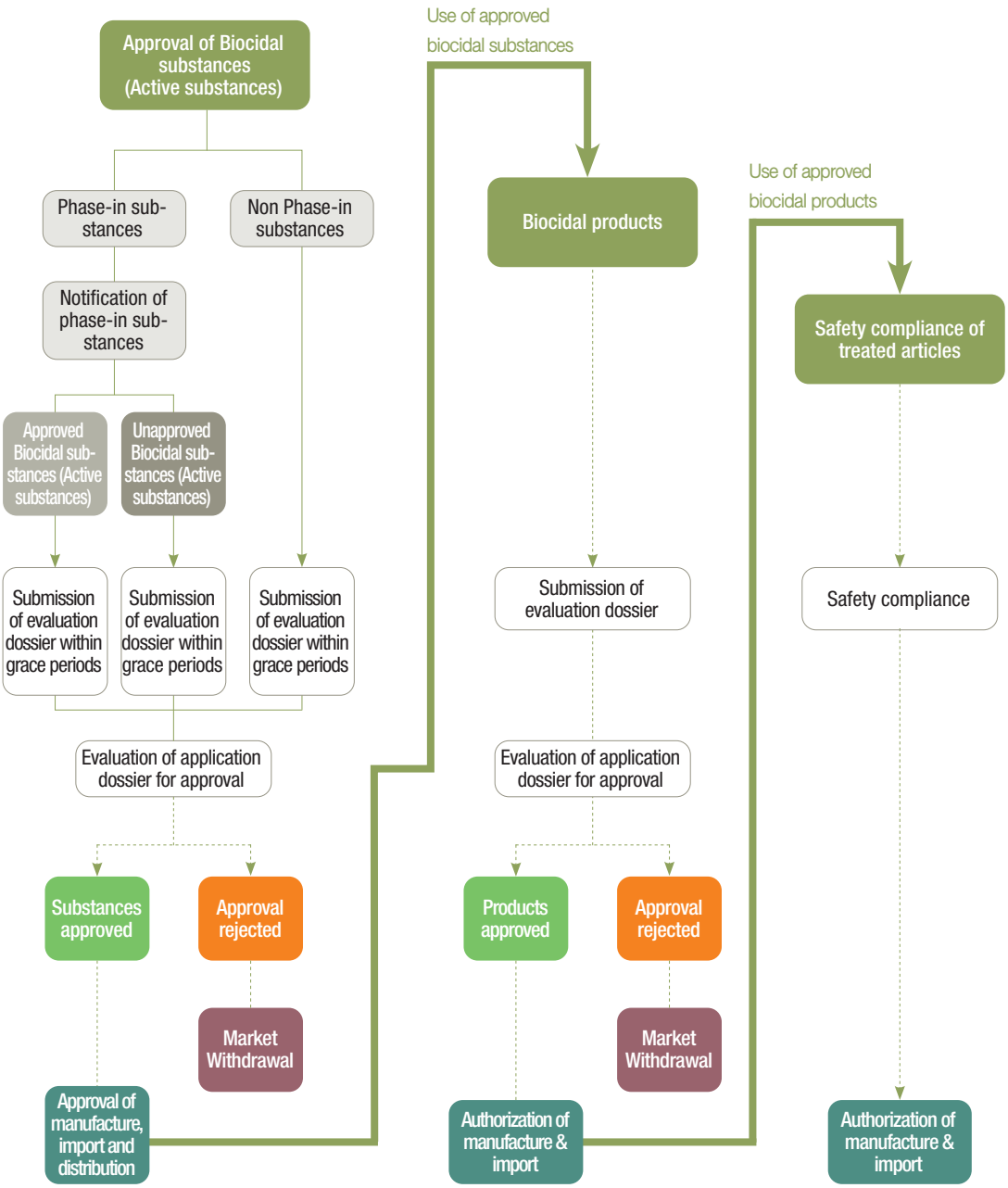
Prepare Chemical Safety Repost

- Preparation service on the risk of chemical substances report
- Preparation service for Joint Registration data of existing chemical substances subject to registration

Summary of 'ACT ON REGISTRATION, EVALUATION, ETC. OF CHEMICALS (K-REACH)'



Biocidal substances, products and treated articles management system



Material Safety Data Sheet(SDS)

Substances subject to SDS preparation

Chemical substances that fall under the hazard and risk classification criteria of hazardous factors, or chemical substances that contain such hazardous chemical substances prescribed in Attachment 18 of the Enforcement Rules of the Occupational Safety and Health Act

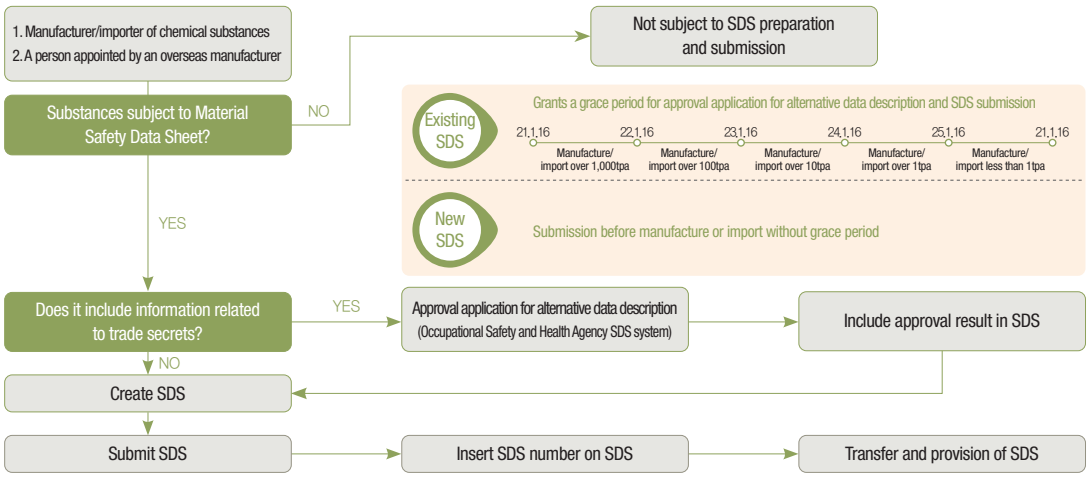
SDS laws and regulations

- Articles 110 to 116 of the Occupational Safety and Health Act
- Article 86 of the Enforcement Decree of the Occupational Safety and Health Act
- Articles 156 to 171 of the Enforcement Rules of the Occupational Safety and Health Act
- Ministry of Employment and Labor Notification No. 2020-130, Classification, Labeling of chemical substances and standards for Material Safety Data Sheet of Chemical Substances

Grace Period of SDS submission

Date of SDS Creation			Date of submission
Created before Jan. 16, 2021	Manufacturing and import volume of chemical substance per annum	1,000t≤	Submission by Jan. 16, 2022
		100t ~ 1,000t	Submission by Jan. 16, 2023
		10t ~ 100t	Submission by Jan. 16, 2024
		1t ~ 10t	Submission by Jan. 16, 2025
		<1t	Submission by Jan. 16, 2026
Newly prepared SDS after Jan. 16, 2021			Submission before manufacturing and importing (regardless of annual manufacturing import volume)
Changes made after Jan. 16, 2021			Submission upon such changes without delay

SDS submission and alternative data description review process



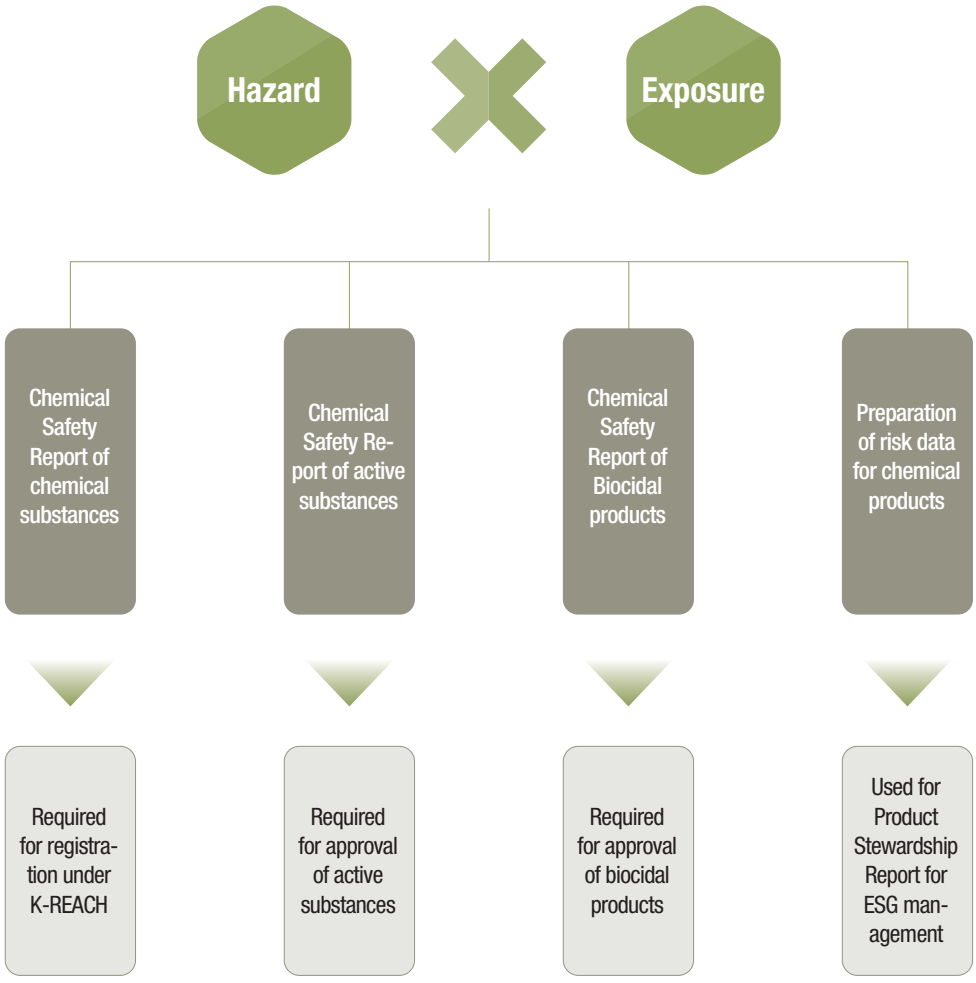
* However, as the submission of data is only excluded in the case of materials for research and development, approval application of SDS preparation and alternative data description shall be applied.

CSR (Risk Assessment)

What is CSR (Risk Assessment)?

Evaluating, using scientific techniques, the consequences for human health or the environment in case hazardous chemicals are exposed to humans and the environment.

Use of CSR (Risk Assessment) reports



Response to International Regulations

USA

Toxic Substances Control Act(TSCA)

Substances not listed on the TSCA Inventory are considered as new chemicals, and in the case of manufacturing/importing new chemicals, a Pre-manufacture Notice (PMN) is issued to the Environmental Protection Agency (EPA). There is an obligation to report Notice Of Commencement (NOC) at the time of commencement of manufacturing/importing.

Premanufacture Notices (PMNs) & Significant New Use Notices (SNUNs):
If your chemical substance is subject to Significant New Use Rules (SNURs) and your intended manufacture, processing, or use of the substance is a significant new use, you would be required to submit an SNUN 90 days prior to the manufacture of that substance.

- Our Services
  - Application for pre-manufacture exemptions
  - Preparation of PMN dossiers
  - Reporting beginning of manufacture/import with NOC
  - Notice of manufacture/import activities(NOA Form B)
  - Review whether chemical is subject to SNUR
  - Setting safety test strategies, arranging/monitoring tests

EU

REACH(Registration, Evaluation Authorization and Restriction of Chemicals)

Within the EU, under REACH regulations, all chemical substances which are imported at 1 ton or more annually are obligated to undergo registration(in case of mixtures, each individual constituent substance must be registered).
Businesses outside the EU may register by appointing an OR(Only Representative).

- Our Services
  - Support for OR appointment process
  - Service on registration/notification, permits, performing duties on restrictions
  - Providing latest news regarding REACH
  - Setting safety test strategies, arranging/monitoring tests

India

India REACH (CMSR)

"India- REACH" (or ICMS Rules or CMS Rules) which will replace existing Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules 1989 and Chemical Accidents (Emergency Planning, Preparedness and Response) (CAEPPR) Rules 1996. India REACH regulatory requirements shall come into force on the date of their publication in the Official Gazette, expected to come into force by the end of 2022.

All Chemical Substances must be Notified, and 750 "Priority substances" must be registered within 18 months.
All industrial sectors of the supply chain must comply with the CMSR, and non-Indian companies/enterprises must appoint an Authorized Representative (AR): an Indian entity, and AR, must comply with the CMSR on behalf of non-Indian companies.

- Our Services
  - Support for AR appointment process
  - Service on registration/notification, permits, performing duties on restrictions
  - Providing latest news regarding REACH
  - Setting safety test strategies, arranging/monitoring tests

China

China REACH

It is a system in which a person (or manufacturer) who imports new chemical substances in China applies for registration of new chemical substances to China's Ministry of Ecology Protection (MEE) prior to the date of import (or manufacture) and receives registration certification. China's MEE was amended on April 29, 2020 [Environmental Management System for New Chemical Substances] MEE Order. 12 was announced, and it came into effect on January 1, 2021.

Currently, there are 46,856 substances listed in China's Inventory of Existing Chemical Substances (IECSC). Substances not listed on this list are considered as new chemicals.

- Our Services
  - Support for OR appointment process
  - Submit to Chinese authorities
  - Production of GLP test data required in China

Customized corporate consultation for ESG

ESG evaluation

- Risk assessment of single chemicals/chemical compounds
- Identification and evaluation of risks in the fields of environment/ safety/ health
- Indicator-based ESG evaluation/due diligence agency for each industry and evaluation agency

Consultation to establish ESG management system

- Establishment of ESG data such as inventory of substances used
- Calculation of carbon emissions
- Preparation of internal/external ESG reports
- Sustainability disclosure (on chemical safety/environment)

Consultation on ESG performance improvement

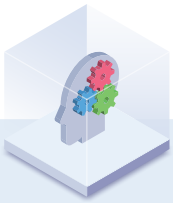
- Establishment of strategies to correspond to/resolve environmental risks
- Designing reduction and circulation system of required resources and establishing strategies for improvement
- Establishment of strategies to evaluate and mitigate the risk of workplace/ecological risks
- Preparation of Product Stewardship Report

Disclosure items

Environmental

- Greenhouse gas emissions
- Energy use
- Water use
- Waste discharge
- Violation of laws and accidents

E



Social

- Employee Status
- Safety and health
- Information security
- Fair competition

S

Governance

- The role of management
- ESG Risk and Opportunities
- Stakeholder Engagement

G

Source: KOSPI "ESG information disclosure guidance"

Product Stewardship Report

- Product Stewardship: Product responsibility throughout its lifecycle in the chemical industry
  - Management activities in which manufacturers voluntarily perform pre/post product management to minimize safety/environmental/health impacts throughout the life-cycle of products, from raw materials to disposal.
  - When using chemical products, the root cause of safety/environmental/health risks lies in the raw materials or manufacturing process of the product, and as a result, the user's safety/environment/health is predominantly affected by the manufacturer's product responsibility.

- Product Stewardship Report (PSR) and ESG management
  - Publication of PSR contributes to the improvement of ESG management by minimizing the safety/environment/health impact on product use and increasing the sustainability of products and industries
  - PSR is directly related to the improvement of ESG evaluation results in social (S) and environmental (E) indicators such as assessment and reduction of workplace/ecological risks of chemicals, safety management of chemicals of interest, statistics on accident occurrence, chemical discharge and resource circulation, etc.

DIRECTIONS

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