

Global Digital Labeling Initiatives

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What is Digital or E-Labeling?

- **Electronic Labeling** is a modern alternative to physical labeling
- E-labeling is a **barcode** of any kind – **Quick Response (QR) Code, Universal Product Code (UPC) or Radio-Frequency Identification (RFID)**
- Shares web-based product information that can be easily read by a digital device (e.g., smartphones, apps, websites, scanners)
- **GS1 Digital Link** is an e-labeling standard that enables dissemination of product data on the web. Provides app, websites and POS scanners (barcodes readers, digital scanners) with rules to translate barcodes.
- By scanning the product code with a smartphone or by entering the URL into a web browser, you are taken directly to important (regulated) product information.
- **E-labeling can be used for a variety of reasons:**
 - 1) Abide by regulatory mandates;
 - 2) Share compliance information;
 - 3) Provide enhanced and expanded product information;
 - 4) Track chain-of-custody in supply chain.



What are the Benefits of E-Labeling?

- Label real estate is limited
- Consumers want to know everything about products
 - demanding **increased transparency**
 - want **access to all types of product information** – ingredient disclosure; nutritional information; country of origin (COO); ethically sourced; recipes/coupons; handling instructions; patient information leaflets (PIL); multiple languages
- Reduction in production costs and improved supply chain traceability
 - Changes made to products – updating compliance information
 - **Supply Chain Custody** - products can be tracked from end-to-end
- Enables product innovation – allows organizations to support multiple iterations of the same products across different markets
- Reduces environmental waste



Part 1

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Part 2

China New HazChem Registration Online System – “One Enterprise, One Chemical Product, One QR Code”

Part 3

South Korea QR Code on Household Chemical Products Subject to Safety Confirmation & Vietnam Goods E-Labeling

Part 4

PHMSA RFI on Electronic Hazard Communication Alternatives

Part 5

Other Digital Labeling Initiatives

Part 1

EC Simplification & Digitalization of Labeling on Chemicals (CLP, Detergents, Fertilizers) Initiative

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Background

- **EU Digital Strategy/European Green Deal**
- **EU Chemicals Strategy for Sustainability (CSS)** ~85 Measures
- **Fitness Check (2019)** evaluated labeling requirements* under:
 - 1) CLP Regulation;
 - 2) Detergents Regulation;
 - 3) Fertilizing Products Regulation

* Labels are the primary means to communicate essential production information to users

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Background

Fitness Check Findings:

- Overload of information on chemicals' labels making it difficult for downstream users and consumers to focus on the essential hazard information leading to reduced effectiveness of hazard communication.
- Communication of hazard and safety information to consumers can be improved and simplified, including by taking advantage of the opportunities offered by digital technologies.
- Eurobarometer survey found that 45% of respondents felt well informed about the potential dangers of the chemicals contained in consumer products.
- Overlaps and inconsistencies between the Detergents Regulation and other pieces of EU chemicals legislation exist, leading to duplications in the labelling requirements for detergents and overloads the labels.

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Background

Fitness Check Evaluation Conclusions:

- 1) There is room for simplification and improvement to better communicate essential information about chemical products to users (particularly consumers); and
- 2) The use of innovative digital tools on products labels could improve communication.

Main Objective:

- To increase the effectiveness of communicating essential information on chemicals including safety and product use instructions, in order to further reduce the impact of harmful chemicals on health and the environment.
- The means of simplifying and streamlining information and introducing the use of digital tools for parts of the labels will be explored to fulfil this objective.

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Initiative Roadmap

Public Consultation (24 Nov 2021 – 17 Feb 2022)

- 205 stakeholders responded (133 industry, 53 consumer representatives, 10, public authorities, 9 other)
- Most effective method to increase communication of info on labels:
 - Simplifying text on labels;
 - Having less information on the on-pack label;
 - Instead provide full details via digital labels;
 - Use more pictograms or graphic symbols instead of text;
 - Reducing number of additional languages on labels.
- Least effective ways to increase communication of info on labels:
 - Having more detailed info provided on on-pack label (e.g., more detailed use instructions)
 - Having all information only provided via IT solutions and not on the on-pack label.
- Prefer to use QR codes and website addresses to access the information online

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Draft Policy Options:

PO 0: No new policy actions (baseline):

- No change, i.e., no rules at all on e-labeling. Continuation with the status quo.

PO 1: Non-legislative measures: use of physical labels plus *voluntary* use of e-label

- Retain all labeling requirements to be provided on physical labels, with a framework set out in a guidance document on the possible use of e-labels (voluntary duplication or addition to the information provided on physical label).

PO 2: Revision of the labeling rules between regulations

- Align the inconsistencies and overlaps between the legal requirements stemming from different regulations on the physical label only (e.g., aligning the language etc.). Voluntary use of e-labels.

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Draft Policy Options (Cont'd):

PO 3: Revision of the labelling rules in the regulations, introducing digital labeling with only certain information provided on the e-label

- Keep most of the information of labeling requirements on physical labels, and allow manufacturers to move certain labelling requirements on the e-label only.

PO 4: Revision of the labeling rules in the regulations, introducing digital labeling with majority of information on the e-label only

- Keep only basic information of labeling requirements on physical labels, and allow manufacturers to move a larger number of labeling requirements on the e-label only.

PO 5: Revision of the labeling rules, introducing digital labeling with the option of providing all information on e-label

- In specific cases, to provide for the option of moving *all mandatory information* onto e-label (for products which currently do not bear a label - e.g., a pen or a "refill" bottle of detergent)

EC Simplification & Digitalization of Labeling on Chemicals Initiative

Commission Adoption

Proposal for a Regulation – Planned for 4Q 2022

Resources:

- https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12992-Chemicals-simplification-and-digitalisation-of-labelling-requirements_en

Part 2

**China New HazChem Registration Online System -
“One Enterprise, One Chemical Product, One QR Code”**



Regulations on Safe Management of Hazardous Chemicals (Decree No. 591 of the State Council)

Chapter 6 - Hazardous Chemicals Registration and Accident Emergency Rescue

Article 66

The State implements a registration system for hazardous chemicals to provide technical and information support for the safe management of hazardous chemicals and the prevention and emergency rescue of hazardous chemical accidents.



Measures for the Administration of Registration of Hazardous Chemicals (SAWS Order No. 53), revised and issued in 2012

Including the purpose, principles, registration scope, registration agencies, registration content, registration procedures, corporate responsibility, penalties, etc.



中华人民共和国应急管理部
Ministry of Emergency Management of the People's Republic of China

对党忠诚 纪律严明 赴汤蹈火 竭诚为民

首页 机构 新闻 公开 服务 互动 科普 党建 社会救援服务

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索引号: 1/2022-00003 主题分类: 危险化学品安全监管 发文单位: 国务院安全生产委员会
成文日期: 2021年12月31日 发文字号: 安委〔2021〕12号 发布日期: 2022年1月5日
标题: 国务院安全生产委员会关于印发《全国危险化学品安全风险集中治理方案》的通知
公文种类: 通知 效力: 有效

国务院安全生产委员会关于印发《全国危险化学品安全风险集中治理方案》的通知
安委〔2021〕12号

各省、自治区、直辖市人民政府，新疆生产建设兵团，国务院安委会有关成员单位，有关中央企业：

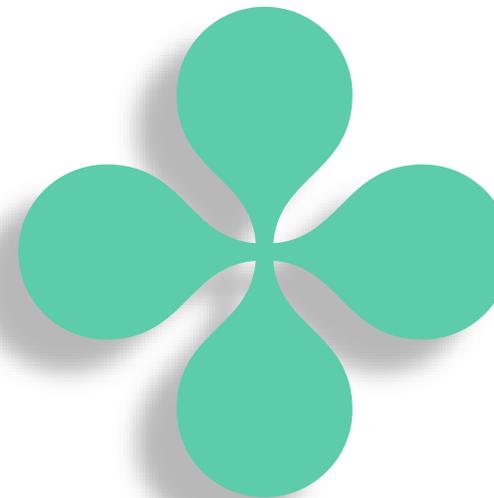
《全国危险化学品安全风险集中治理方案》已经中央领导同志同意，现印发给你们，请结合实际认真贯彻落实。

国务院安全生产委员会
2021年12月31日

(V) Enhance the level of digital intelligent control of hazardous chemical safety risks

Ministry of Emergency Management (MEM) is responsible for promoting the upgrade of the chemical registration system.

Implementation of **"One Enterprise, One Product, One QR Code"** management for each enterprise of each hazardous chemical.



Expand the registration scope of chemical and pharmaceutical enterprises

Add the standardized generation function of the enterprise terminal, mobile terminal and "SDS & label" of the system

Guandong Pilot Project (July 2021)

广东省应急管理厅

粤应急函〔2021〕271号

广东省应急管理厅关于开展化学品登记综合服务系统和“一企一品一码”标识化管理应用工作的通知

各地级以上市应急管理局：

根据应急管理部化学品登记综合服务系统（以下简称“化学品登记系统”）升级改造和在广东省率先开展“一企一品一码”标识化管理应用的部署要求，统一化工和危险化学品安全生产基础数据，决定在全省开展企业基础信息完善采集、监测预警数据闭环和“一企一品一码”标识化管理工作。现将有关事项通知如下：



1. Applicable Enterprises

- The new registration system is based on the principle of “**One Enterprise, One Product, One QR Code**”, and the QR code can be automatically generated online for enterprises that have completed the **registration of hazardous chemicals produced or imported hazardous chemicals**.
- Enterprises that only operate or use hazardous chemicals or other chemical and pharmaceutical industries that are **not involved in importation** need to report simplified information on the new platform, do not get issued registration certificates, and are not assigned new “QR codes”.

2. Applicable Products

- “QR code” management is suitable for chemicals listed in **Catalogue of Hazardous Chemicals** and other chemicals that comply with the principles of catalogue determination.
- Hazardous chemicals operated and used within the territory of the People's Republic of China shall have “QR codes”.

3. Generation Process

For Enterprises that complete the registration of hazardous chemicals, products, and imports of hazardous chemicals, the system will automatically generate a "hazardous chemical QR code".

Enterprises can edit the "QR code" loaded to generate a new "QR code".

化学品名称	CAS号
氮[压缩的或液化的]	7727-37-9
氨	7664-41-7
氯酸钾	3811-04-9
碳酰氨	75-44-5



确定

储存详情	二维码	
详情展示	二维码	维护 <input type="checkbox"/> 安全技术说明
详情展示	二维码	维护 <input type="checkbox"/> 安全技术说明
详情展示	二维码	维护 <input type="checkbox"/> 安全技术说明
详情展示	二维码	维护 <input type="checkbox"/> 安全技术说明

4. Contents of the QR Code

Fixed Information

Name of hazardous chemical, CAS number, registration number, enterprise name, some label elements (signal word, hazard pictogram, hazard statement), first-aid measures, emergency response to leakage, fire extinguishing methods.



化学品安全信息码

化学品名称 氨

中文别名 液氨;氨气

CAS号 7664-41-7

登记号 4401100012100001

企业名称 广东测试企业001

警示词 危险



危险性说明

易燃气体,含冷冻液化气体,可引起冻伤,吞咽会中毒,皮肤接触会中毒,吸入致死,对水生生物有毒,对水生生物有害并且有长期持续影响

急救措施

立即脱去污染的衣着。应用2%硼酸液或大量

化学品安全信息码

钟。就医。迅速脱离现场至空气新鲜处。保持呼吸道通畅。如呼吸困难,给输氧。如呼吸停止,立即进行人工呼吸。就医。

泄漏应急处置

远离火种、热源,工作场所严禁烟。使用防爆型的通风系统和设备。防止气体泄漏到工作场所空气中。避免与氧化剂、酸类、卤素接触。搬运时轻装轻卸,防止钢瓶及附件破损。配备相应品种和数量的消防器材及泄漏应急处理设备。 储存注意事项: 储存于阴凉、通风的库房。应与氧化剂,酸类、卤素、食用化学品分开存放,切忌混储。采用防爆型照明、通风设施。禁止使用易产生火花的机械设备和工具。储区应备有泄漏应急处理设备。

灭火方法

灭火剂: 雾状水、抗溶性泡沫、 二氧化碳、砂土。

[化学品安全标签 \(点击下载\)](#)

[安全技术说明书 \(点击下载\)](#)

5. Application Scenarios and Requirements

5.1 Requirements for Packaged Hazardous Chemicals

For packaged hazardous chemicals (except gas cylinders and pesticides), before the product leaves the factory or before the imported chemical enters circulation, the enterprise should print or paste the QR code on the inner and outer packaging.

A. For gas cylinders, pesticides and other special products with standards otherwise specified, the production or import enterprises of hazardous chemicals shall affix the "QR code" next to the product label.



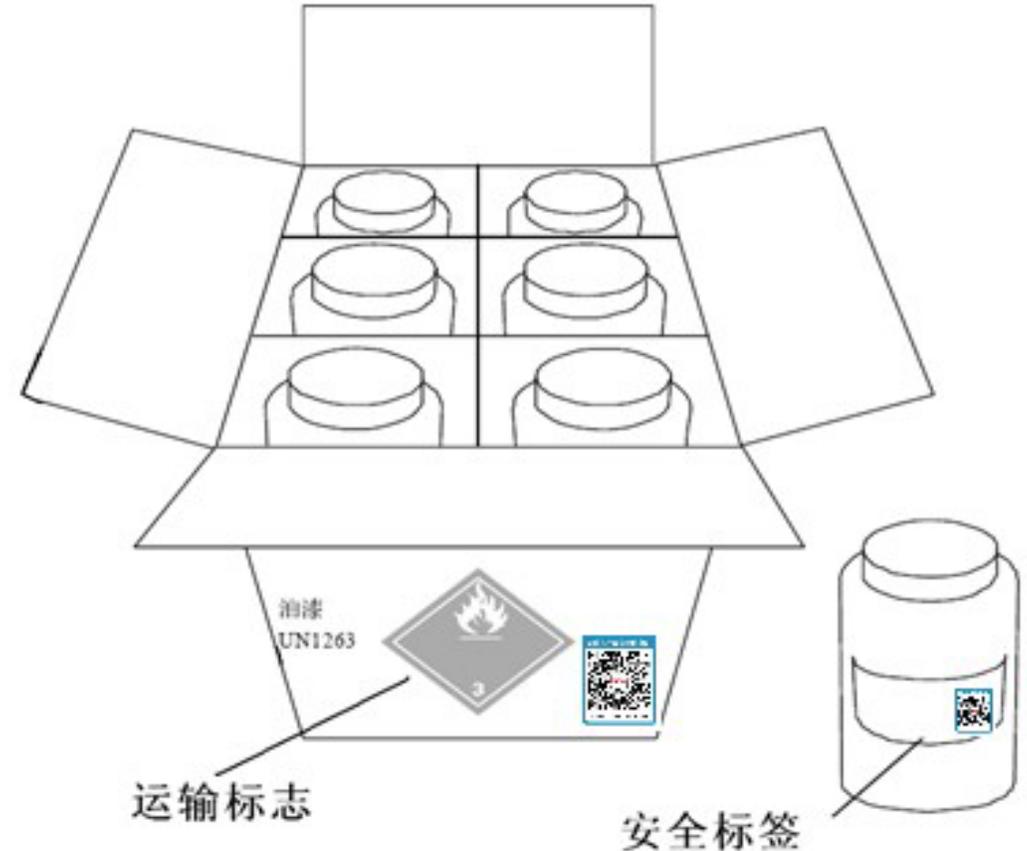
5. Application Scenarios and Requirements (Cont'd)

B. Requirements for Combination Packaging

If the outer packaging does not have a GHS label, a “QR code” must be attached next to the dangerous goods transportation label. If the outer packaging has a GHS label, you need to ensure that the “QR code” is affixed on the GHS label.

Imported Hazardous Chemicals

- Shall affix the “QR code” as required above before the product goes through the Customs check.
- If it cannot be completed before entry of Customs, “QR code” should be added before the product enters the Chinese market.



5. Application Scenarios and Requirements (Cont'd)

5.2 Requirements for Hazardous Chemicals without Packages

When enterprises entrust the transportation of hazardous chemicals, the “QR code” should be provided to the carrier, driver and purchaser, and the “QR code” or label with “QR code” shall be printed, pasted or hung at the eye-catching position of the transport unit.



6. Future Actions

- **Trade Secret Protection** - Hazardous chemical businesses and sub-packaging enterprises (including filling and adding non-hazardous chemicals solvent for dilution) can apply through the National Hazardous Chemicals Registration comprehensive service system to fill in the relevant information of the actual production or import enterprises, and generate the safety information code (QR code) with the enterprise's logo after being reviewed by the municipal emergency management department and the provincial chemical registration authority. (Not implemented yet)
- **Representative Agent** - Foreign enterprises that intend to export hazardous chemicals to the People's Republic of China may act as an applicant for the safety information code (QR code), but it shall designate a domestic registered hazardous chemical production or import enterprise as an agent to jointly perform relevant obligations and bear responsibilities according to law. (Not implemented yet)
- **If an import enterprise urgently needs to add new varieties of imported hazardous chemicals**, it may, after submitting the variety change materials and making a commitment to authenticity and accuracy, apply for the generation of safety information codes (QR codes) according to simple procedures and complete the registration change within the specified time limit. (Not implemented yet)
- **Safety Information Code (QR Code) Information** can be read through two-dimensional code scanning software, such as “Hazardous Chemicals Registration” app, WeChat, etc., or through the National Hazardous Chemicals Safety Public Service Internet platform, enter the hazardous chemicals registration number to query the relevant information. (Under functional improvement)
- **“Hazardous Chemicals Registration” App** – used to scan and identify the authenticity of the safety information code (QR code). (Function development in progress)

6. Future Actions

Gradual Promotion

Improve Systems and Standards

- Drafting **Regulations on the Management of Safety Information Codes (QR code) of Hazardous Chemicals (for Trial Implementation)**
- **QR Code Management Enforcement Rules** to be issued by MEM as department rules
- Revising **GB 15258-2009 General Rules for Preparation of Precautionary Label for Chemicals (Project initiation)**

➤ Policy Release

In the **Special Work Plan for Upgrading, Transformation, Promotion and Application of the Comprehensive Service System for Hazardous Chemicals Registration** issued in 2022, the requirements for promoting the management of "**One Enterprise, One Product, One QR Code**" are put forward. By updating the information of production and import enterprises, the products of relevant enterprises can generate safety information codes (QR code).

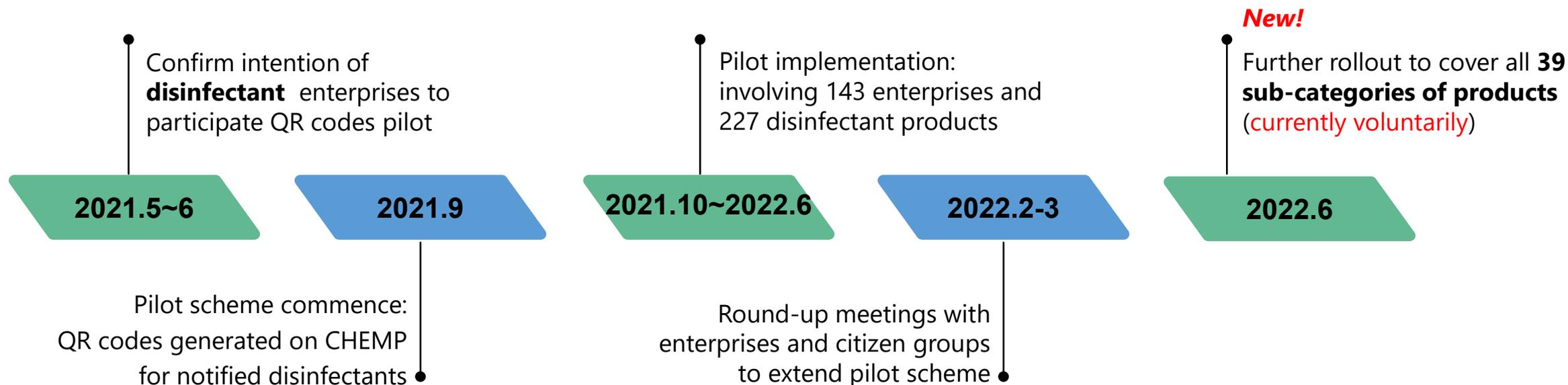
➤ Expand Pilot Projects

- In Suzhou, the HazCom QR Code will be mandatory by end of Oct 2022 and mandatory inspections will be carried out
- Zhejiang and Shandong will implement new pilot programs:
 - By 30 Sep 2022, enterprises that manufacture/import hazardous chemicals in Shandong shall verify, update or supplement the registration information via the Hazardous Chemical Registration Comprehensive Service System (<https://whpdj.mem.gov.cn>).
 - By 30 Oct 2022, enterprises that manufacture/import hazardous chemicals in Shandong shall affix the generated QR code to the packages of the hazardous chemicals or display the QR code on the blank part of the corresponding SDS
 - Official documents for Zhejiang and Shanghai's pilot programs are expected to be issued soon.

Part 3

**South Korea QR Code on Household Chemical
Products Subject to Safety Confirmation
& Vietnam Goods E-Labeling**

1.1 Implementation Timeline of QR Codes for Household Chemical Products Subject to Safety Confirmation



Legislative Progress

MoE plans to amend K-BPR Enforcement Rules (Article 7, Paragraph 2) on labelling standards to mandate QR codes on all listed household chemical products subject to safety confirmation (as planned in 2022)

1.2 Categories of Household Chemical Products Subject to Safety Confirmation

- Pilot QR codes for disinfectants from Sep 2021
- Cover all listed products (39 sub-categories) from June 2022

	Categories (13)	Sub-Categories (39)
1	Detergent products	Cleansers; Removers
2	Laundry products	Laundry detergents; Bleaching agents; Fabric softeners
3	Coating products	Gloss coatings; Special purpose coating agent; Anti-rust additives; Lubricants; Ironing auxiliaries
4	Adhesive products	Adhesives; Gap and crack fillers
5	Air freshener products	Air fresheners; Deodorizing agents
6	Dye and colorant painting products	Dye agents; Colorant painting agents
7	Auto products	Windshield washer fluids for automobiles; Engine antifreezing agent
8	Printing and document related products	Ink cartridges and toners; Red seal ink pads; Correction fluids and tapes
9	Beauty products	Adhesives for beauty; Tattoo inks
10	Disinfection products	Disinfectants ; Algicide; Antibacterial and disinfectant for humidifiers; Quarantine sterilization and disinfectant for the prevention of infectious diseases
11	Insect repellent products	Insect repellents; Health pesticide; Health repellent; Pesticide for preventing infectious disease prevention; Rodenticide for infectious disease prevention
12	Preservatives, Preservative-treated products	Wood preservatives; Preservative-treated filter products
13	Others	Candle; Dehumidifying agent; Artificial snow spray; Fog liquid for performance; Household chemical products for humidifiers

1.3 QR Code Application

QR code automatically generated on the [CHEMP](#) website after accomplishing notification for household chemical products subject to safety confirmation.

Manufacturers and importers shall download the QR codes and attach them to their products. If the products will be sold online, their QR codes are required to be displayed on the e-commerce platform accordingly.

		안전확인대상생활화학제품 표시사항
신고번호: 0000		
품목:	제품명:	
용도:	제형:	
제조사, 주소, 연락처:		
사용 물질:		
사용상 주의사항 등		



Easy access to product information:

- **Notification Info:** approval number, laboratory for safety confirmation testing, product type, release date of certificate for notification, safety confirmation standards, expiry date of testing report, etc.
- **Product Info:** product name, uses, expiry date, precautions, etc.
- **Ingredient Info:** main substances, preservatives, potentially allergenic substances, surfactants, etc.
- **Manufacturer/Importer Info**



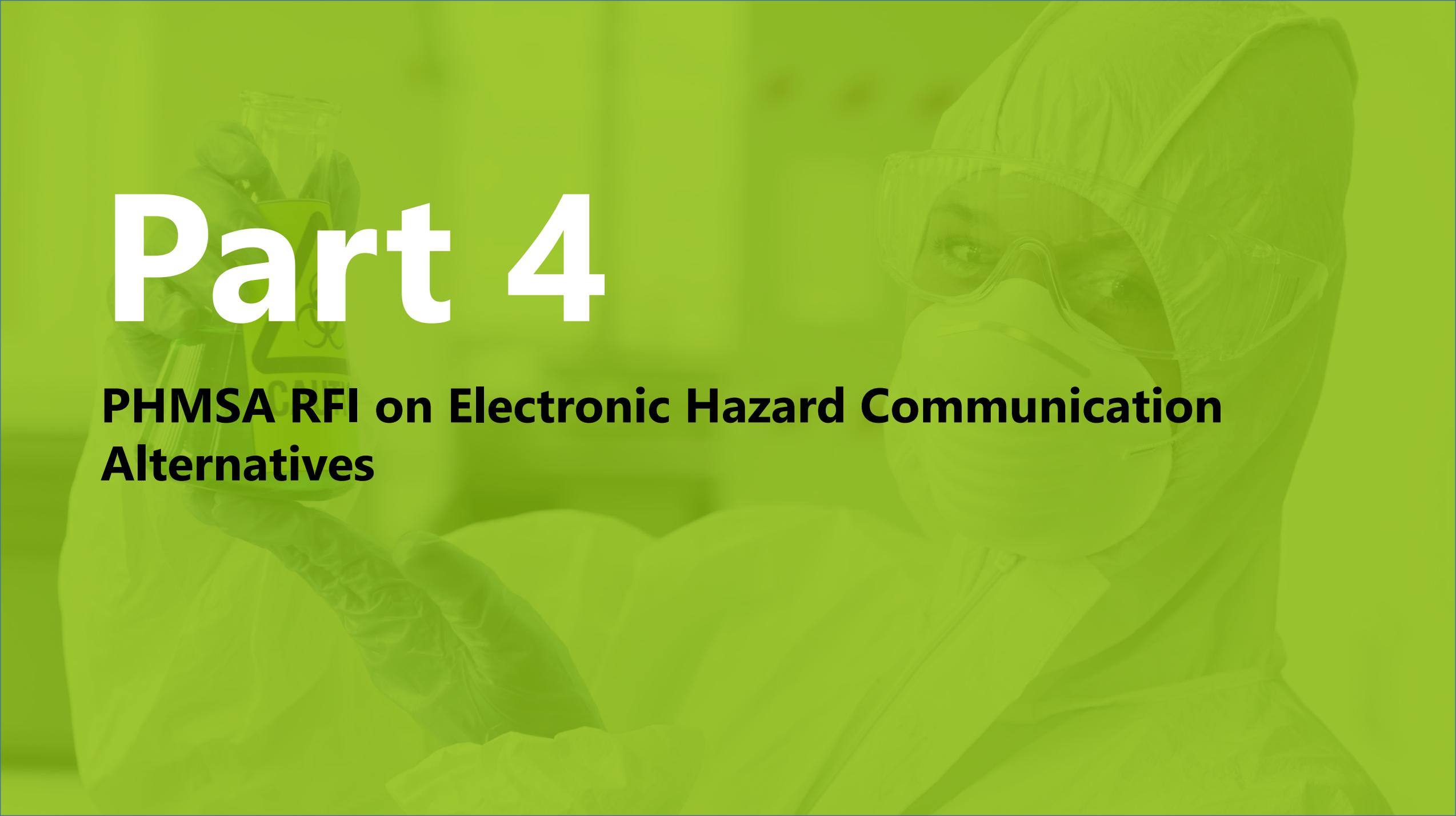
2.1 Goods E-Labeling under Decree No. 111/2021/ND-CP

On 9 Dec 2021, the Government of Vietnam issued Decree No. 111/2021/ND-CP amending Decree No. 43/2017/ND-CP on goods labeling, which took effect on 15 Feb 2022. Decree 111 stipulates that several of the contents can be presented electronically.

On 21 Jan 2022, the Ministry of Science and Technology published the "***Draft Circular Stipulating the Display of Some Mandatory Labeling Contents by Electronic Method***" for public comments. Final version hasn't been issued.

E-Labeling:

- Manufacturers, traders and importers could label their goods by electronic means, except for information on the **manufacturing date, expiry date, ingredients and warnings** which must be displayed on physical labels.
- Electronic means to display labeling contents:
 - on website with the link thereto, or
 - via a QR code, an article number code or a barcode

A person in a white lab coat and protective gear (goggles, mask, gloves) working in a laboratory setting, holding a beaker and a pipette.

Part 4

PHMSA RFI on Electronic Hazard Communication Alternatives

Electronic Hazard Communication Standard

- DOT PHMSA published a “**Hazardous Materials: Request for Information (RFI) on Electronic Hazard Communication Alternatives**” in the 11 Jul 2022 Fed Reg.
- PHMSA is considering revisions to the **Hazardous Materials Regulations (HMR)** which would authorize a performance-based electronic communication alternative to the existing physical, paper-based hazard communication requirements. Forms of documentation required by HMR include:
 - Shipping papers;
 - Emergency Response information;
 - Train Consists;
 - Notifications to Pilot in Command;
 - Dangerous Cargo manifests;
 - Shipping papers in motor vehicles;
 - Additional documentation such as DOT Special Permits (SP), approvals, and registrations.
- Comment period has been extended to **24 Oct 2022**

Part 5

Other Digital Labeling Initiatives:

- **EPA Office of Pesticides Program Electronic Labeling (OPPEL) Initiative**
- **Cosmetic Digital Labeling Initiatives**

EPA Office of Pesticide Electronic Label (OPPEL) Pilot

Background

- *"The Label is the Law"*
- Current EPA label review and retrieval system is antiquated
- Reviewing labels is a slow, costly, manual process
- Labels are currently submitted as PDFs or paper
 - No structured template → Inconsistent format
 - Non-digital format → Data manually extracted into multiple databases
 - Uncontrolled vocabularies → Data must be interpreted by EPA
- Result
 - Time consuming/Inconsistent EPA reviews and interpretations
 - Back and forth with registrants about interpretation
 - Limited ability to compare to existing products
 - Inefficient work processes
 - Can't easily answer questions about existing registrations



EPA Office of Pesticide Electronic Label (OPPEL) Pilot

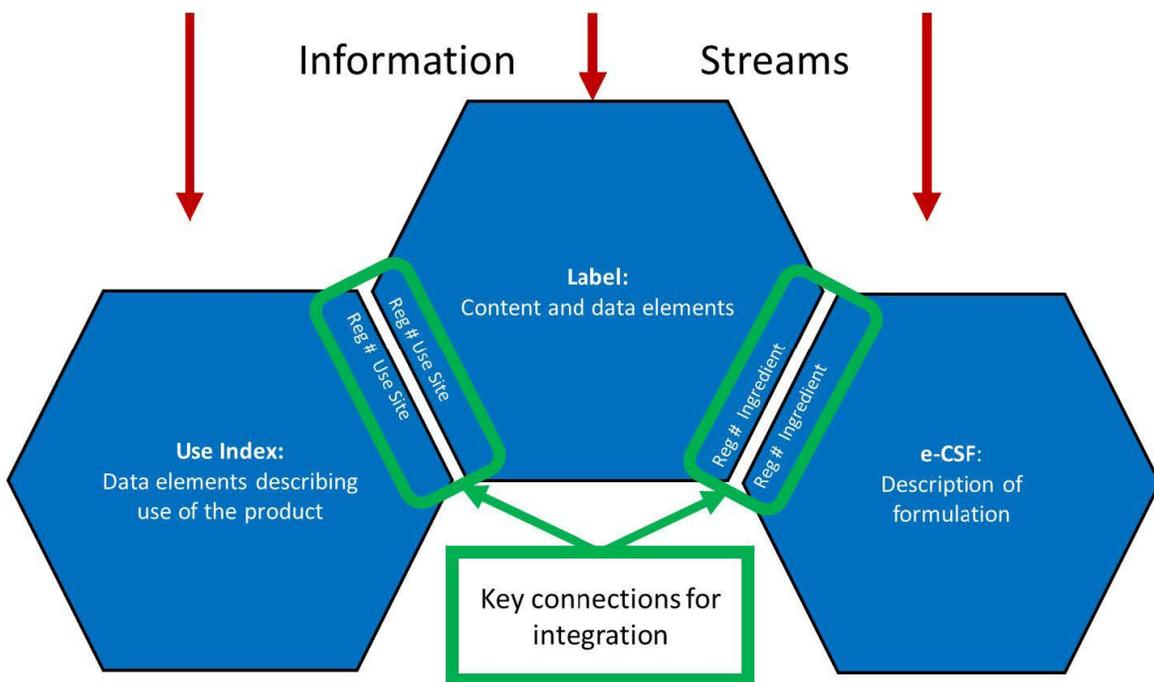
Solution:

- **Structured E-Content**
 - Standardizing format of label (“**Structured Labels**”)
 - **Standardized Terminology & Vocabulary**
 - Delineation of Product use Patterns (“**Use Index**”)
- **Part of Larger OPP Digital Transformation Effort**
 - Expansion of the Pesticide Submission Portal (**PSP**);
 - OPP Structured Content Review (**OSCR**) Tool; and
 - Electronic Confidential Statement of Formula (**eCSF**)
- **Together, these represent progress towards:**
 - Scalable plan for OPP data management and access;
 - Process to improve label review and risk assessment workflow;
 - OPP’s vision of instantaneous access to quality information;
 - Allows for multiple views/perspectives of content & integration with other systems

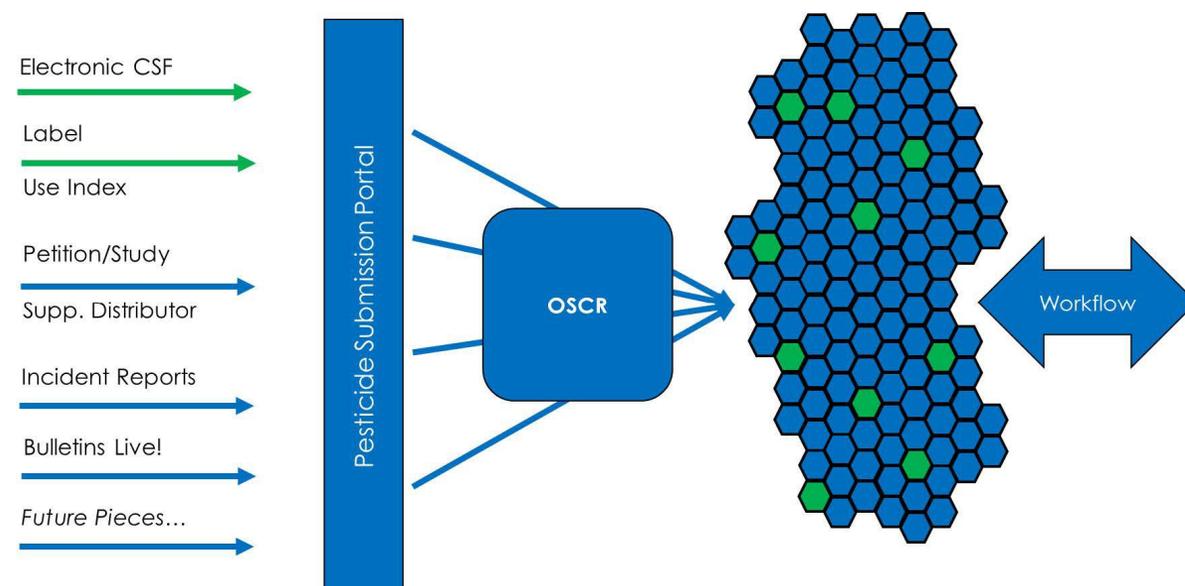


EPA Office of Pesticide Electronic Label (OPPEL) Pilot

Purposeful linking information



Across multiple data streams



EPA Office of Pesticide Electronic Label (OPPEL) Pilot

Phase 3 of the Pilot:

- **OPPEL Content Builder**

- Allows users to input pesticide label content by Category (e.g., precautionary statements, directions for use, etc.), and pick lists of vocabulary terms (e.g., active ingredient, use site, pest, etc.) that, when put together, make up the pesticide product label content.
- These vocabulary terms will be used for searching and sorting pesticide labels.

- **OPPEL Use Index Builder**

- Allows users to input product use data using a structured format, numerical data fields, and picklists of vocabulary terms (e.g., active ingredient, use site, application equipment, application timing, restrictions/limitations, etc.) that, when put together, make up the pesticide product use list.
- These vocabulary terms and numerical data fields will be used for searching and analyzing product use data.

- **Updated Documentation**

- Includes revised User Guide, vocabulary lists, and style sheets.

- **Resource** - <https://www.epa.gov/pesticide-registration/office-pesticide-program-electronic-label-oppel-pilot>

Cosmetic Digital Labeling Initiatives

EU Cosmetics Product Regulation Reform

- Opportunity for more labeling requirements to be **off-pack** and a threat of CLP pictograms being required on pack

Canada Cosmetic Regulations Reform

- Health Canada is proposing adding flexibility for the disclosure of ingredients (including certain fragrance allergens) **digitally** for cosmetics sold in small packaging;
- The proposal would require those using this flexibility to include a prompt to direct consumers to a digital space where the list of ingredients is available.
 - The prompt might read: "For a list of ingredients, visit: / Pour la liste des ingrédients, visiter: URL.ca."

Cosmetic Digital Labeling Initiatives

Braille Labeling – Columbia

- In June 2022, Columbia's Congress passed law that requires cosmetics, food, cleaning products, drugs and pesticides labeled for people with visual disabilities
- To comply, labels must use Braille or digital aids, **QR codes**, or provide individual assistance at store
- Content that needs to be labeled is TBD
- Law enters into force **July 2027**

Braille Labeling – Korea

- Korean National Assembly Proposal (Draft) for cosmetic label product information in Braille and **text-to-speech conversion codes** on the container or packaging of cosmetic products

Braille Labeling – Brazil

- Dec 2021 ANVISA Regulatory Assessment exploring the use of **QR codes** to display braille labeling; mandatory Braille required for pharma products

Thanks !!

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