White Paper Summarizing Existing Labeling and Voluntary Programs

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Contents

Abbreviations

BIL	Bipartisan Infrastructure Law
BPI	Biodegradable Products Institute
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
ELVS	End of Life Vehicle Solutions Corporation
EOL	end-of-life
EPA	U.S. Environmental Protection Agency
EPR	extended producer responsibility
EU	European Union
FTC	U.S. Federal Trade Commission
NVMSR	National Vehicle Mercury Switch Recovery Program
OSHA	Occupational Safety and Health Administration
QR	quick response
RCRA	Resource Conservation and Recovery Act

1 Introduction

A clean energy transformation is underway. As the United States rapidly transitions away from fossil fuels, renewable energy sources are seeing unprecedented growth. Batteries are playing a central role in this transformation. They power everything from cars and trucks to electric bikes (e-bikes) and consumer electronics. They are also used in many industrial applications, from powering construction and agricultural equipment to providing backup power for critical infrastructure and storing energy for renewable power generation. As battery use increases globally, so does the demand for critical materials needed to manufacture single-use and rechargeable batteries. To reduce global reliance on the mining of virgin raw materials, including cobalt and lithium, the United States will need to increase the recovery of these critical materials from end-of-life (EOL) batteries. However, increasing these recovery rates will require overcoming the current technological, economic, regulatory, and social barriers to the safe collection and recycling of batteries. Today, many batteries are disposed of in municipal solid waste or recycling because consumers lack information on how or where to properly manage them. Products containing embedded batteries are often disposed of in municipal solid waste because consumers are unaware of the presence of a battery.

Sections 70401 and 40207 of the Bipartisan Infrastructure Law (BIL) direct the U.S. Environmental Protection Agency (EPA) to address these challenges along the battery life cycle through the development of voluntary battery labeling guidelines, battery collection best practices, consumer education materials, and a national extended producer responsibility (EPR) framework for batteries drafted in close coordination with the U.S. Department of Energy (DOE).[1] Together, these efforts will help state, local, and Tribal governments establish and improve battery collection programs and help consumers more easily participate in proper battery EOL management, reducing the frequency of safety incidents from improper battery disposal (e.g., fires at waste management facilities).

By developing new voluntary battery labeling guidelines, EPA seeks to increase consumer awareness of the presence of batteries in products and to empower consumers to properly dispose of them, depending on their local collection programs. Additionally, EPA aims to increase the proper identification and handling of batteries in battery collection, sorting, and processing facilities, which should improve the safety of facility staff and also increase the recovery of critical materials within the developing U.S. battery recycling infrastructure. These activities are essential to advancing the circular economy for batteries and strengthening the U.S. supply chain for critical materials.

This white paper reviews existing labeling guidelines and labeling programs to highlight program successes and challenges that may inform the process to develop and implement EPA's voluntary battery labeling guidelines and consumer education materials. EPA researched existing labeling guidelines and programs for recycling and composting; energy and water conservation; food nutrition; pesticides; fuel economy; hazard communication; and household hazardous waste.

This white paper is not a policy declaration by EPA, nor does it set forth any voluntary or required labeling standards, recommendations, or guidelines. Inclusion of any standard in this paper does not constitute an endorsement from EPA. This white paper is intended as a reference material only and serves as foundational research to inform the development of the forthcoming voluntary battery labeling guidelines as mandated by BIL Section 70401(c).

2 Labeling Examples for Recycling and Composting

Recycling and reuse labels are used to communicate to consumers how to effectively manage a product at the end of its useful life. However, consumers do not always understand which products can be recycled due to a lack of standardized or easily understood labels and due also to variability in the range of products accepted by municipal recycling programs across the United States.

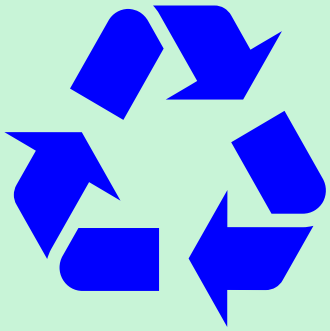
Additionally, in recent years, the plastics recycling industry has come under scrutiny for truth in labeling, with critics stating that the use of the "chasing arrows" symbol on some plastic products is deceptive. The U.S. Federal Trade Commission (FTC) Green Guides set restrictions on what can be claimed as recyclable. For a product or package to be considered recyclable, it should be recoverable from the waste stream through an established recycling program and 60 percent of communities where the product is sold must have access to recycling facilities that can recycle that product.[2]

Like recycling labels, composting labels require coordination among industry organizations to ensure consistent product messaging to consumers. The goals of labeling for composting are to reduce contamination within waste streams, facilitate composting programs, and decrease landfill methane production through diversion of organic wastes. For example, the Biodegradable Products Institute (BPI) compostable certification label indicates to consumers, composters, and others that a product or packaging is compostable.[3] Composters work with BPI to create standards that must be met before a product receives the BPI certification label.

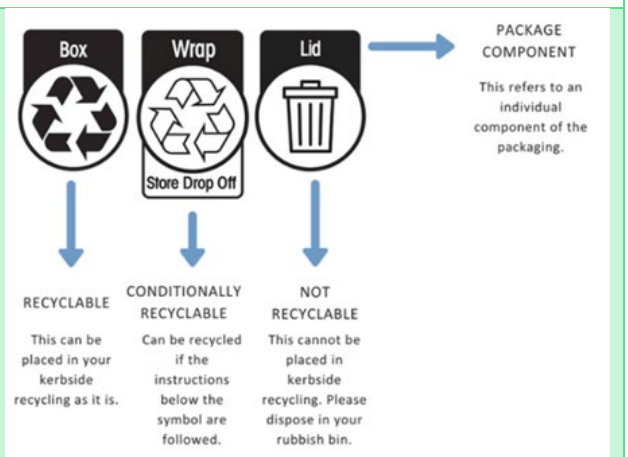
Despite coordination efforts among organizations, data on the effectiveness of recycling, composting, and reuse labels for EOL management are limited. Specifically, there is limited information indicating whether recycling label policies have changed the recycling rates in areas where the policies have been implemented. Research from the Auckland School of Technology indicates that consumers' willingness to spend more for more sustainable options depends on their knowledge and attitudes about sustainability.[4] The research also found that it is beneficial to pair labeling policies with other governmental regulations and business actions that promote sustainable attitudes.[4] Recycling and reuse labels are also more successful when they are created with the specific requirements of recyclers and composters in mind.[3] When labels are designed in this way, they can help improve the efficiency of recycling and reuse operations, rather than create additional burdens for operators.

Table 1 presents examples of recycling and composting labels.

Table 1: Examples of Recycling and Composting Labels

Name	Description	Symbol
ISO Environmental Labels and Declarations[5]	ISO 14021 provides guidance to a variety of organizations on how to make self-declared environmental claims.[6] ISO 7000 provides guidance on the use of the Mobius loop (i.e., chasing arrows symbol) as the general symbol of recovery and recyclability.[7] Although the chasing arrows symbol is widely recognized, it is not standardized and may lead to	

Name	Description	Symbol
	confusion.[6] The symbol is sometimes accompanied by disposal instructions and/or a recycled content claim.[6] Placement is determined by the product or package manufacturer.	
France Triman	French law requires that all recyclable products covered by an EPR scheme must be distinguished by a common label.[8] The Triman logo is one example of a singular, country-specific label that is standardized to communicate recyclability.	
How2Recycle®	How2Recycle's four recycling labels use standardized terms and symbols to indicate how to recycle or dispose of products. The chasing arrows label with a diagonal line through the middle indicates the product is not recyclable.[9] The chasing arrows label with "check locally" text indicates that the consumer much check if the product can be recycled in their location.[9] The chasing arrows label with no additional text indicates that the product is widely recyclable (that is, accepted by at least 60 percent of U.S. recycling facilities).[9] The chasing arrows label with "store drop-off" text indicates that the product is not accepted in most curbside bins or drop-off programs, but is accepted at participating retailers. Products may contain one or more of these labels to indicate recyclability of multiple packaging components.	   
How2Compost	The How2Compost label appears on packaging or products that the BPI certifies as compostable in an industrial composting facility. The label uses a symbol with supporting text that clearly indicates that the product or packaging should not be placed in backyard compost. Additionally, the label includes the URL for a website where consumers can look up if the product or	

Name	Description	Symbol
	packaging is accepted at a facility in their area.[10]	
Australasian Recycling Label	Similar to the How2Recycle label, this label identifies specific parts of a package (lid, cup, sleeve, etc.) and identifies the proper way to dispose of them.[11]	
European Union (EU) Single-Use Plastic Label	The EU Directive on single-use plastics has labeling requirements for products commonly found on Europe's beaches. The labels inform consumers about the plastic content in products, disposal options that are to be avoided, and harm to the environment that can result from improper disposal.[12]	

3 EPA Labeling and Voluntary Programs

Beyond the recycling and composting sectors, EPA operates several labeling programs that could serve as examples for EPA's forthcoming guidelines. This section summarizes information about the development and effectiveness of four existing labeling programs and describes effective implementation strategies for each program.

3.1 ENERGY STAR

EPA and DOE developed the ENERGY STAR voluntary certification and symbol with the idea that a government-sponsored program could simultaneously support economic growth and environmental protection. EPA suspected that placing an easily identifiable label on energy-efficient goods would sway consumer purchasing habits towards products that reduce greenhouse gas emissions and pollutants and save consumers money on energy bills. Since 1992, consumers have saved over 5 trillion kilowatt-hours of electricity, saved more than $500 billion in energy costs, and prevented 4 billion tons of emissions through purchasing ENERGY STAR products. In that time, ENERGY STAR has become "the international standard for energy efficiency and one of the most successful voluntary U.S. government programs in history."[13]

The ENERGY STAR program has partners in the public and private sectors, including utility companies; manufacturers and retailers; state and local governments; real estate developers; and nonprofits. Through these partnerships, EPA has provided the support and stability homeowners, businesses, and organizations need to advance their energy efficiency.[13] Successful outreach and partnership efforts have led to 12 percent of U.S. homes achieving the ENERGY STAR certification. ENERGY STAR program success is also evident in the fact that 90 percent of American households recognize and understand the ENERGY STAR icon (see Figure 1).[13]

Figure 1: ENERGY STAR label. *Source: ENERGY STAR, n.d.*[14]

To earn the ENERGY STAR certification, a product must meet the energy efficiency standards set by EPA. When developing energy efficiency requirements, EPA considers the product's overall impact on nationwide energy savings; performance and features desired by consumers; cost savings compared to less energy-efficient counterparts; market availability through use of non-proprietary technologies; verification of energy consumption and performance through testing; and visible differentiation through labeling.

Third-party certification is required for products, residential buildings, and commercial buildings to earn the ENERGY STAR label.[15] Revisions to the energy efficiency requirements occur based on changes to federal regulations, energy-saving technologies, product availability, consumer energy-saving data, product performance, and product testing.[14] Understanding how ENERGY STAR adjusts it requirements may lead to useful insights when considering different approaches to updating EPA's voluntary labeling guidelines so they keep pace with the evolving battery landscape.

3.2 WaterSense

The EPA's WaterSense voluntary partnership and labeling program helps consumers identify water-efficient products and save money on utility bills. EPA considers a product to be water efficient if it uses 20 percent less water than conventional counterparts. Today, more than 25,000 products, ranging from irrigation technology to faucets, carry the WaterSense label. WaterSense relies on third-party certifying bodies to test the efficiency and performance of products that bear the WaterSense label (see Figure 2). Since the program's launch in 2006, EPA reports that WaterSense products have saved Americans 8.7 trillion gallons of water and 997 billion kilowatt-hours of electricity. As a consequence, American consumers have saved over $207 billion on water and energy bills.[16]

As with ENERGY STAR, the success of the WaterSense program is partly attributable to strong partnerships across public and private industries.[16] WaterSense partners promote the program through their participation in national outreach campaigns, annual feedback on water-efficiency activities, and backing of WaterSense-labeled products.[16] The WaterSense website provides educational materials and programming for ambassadors and consumers, including sector-specific water-saving ideas and facts about water use.[16]

Figure 2: WaterSense label. *Source: EPA, 2024.*[16]

The WaterSense program guidelines outline the public process for developing and revising water-efficiency specifications.[17] EPA evaluates candidates for the WaterSense label based on each product's potential for water savings; performance compared to conventional counterparts; market availability through use of non-proprietary technologies; and cost-effectiveness. EPA verifies each product's water savings and

performance, and there must also be assurance that the product will not have negative environmental or economic externalities.[18]

3.3 Safer Choice

The EPA's voluntary Safer Choice label helps consumers and purchasers identify cleaning products—ranging from hand soaps and fabric softeners to bathroom and dry erase board cleaners—that are safer for human health and the environment.[20] EPA rigorously reviews every chemical in a product before the product receives a Safer Choice label (see Figure 3). To fulfill the Safer Choice Program requirements, manufacturers must use chemicals that are less hazardous than the conventional ingredients.[19] Safer Choice products must also comply with EPA's standards for pH, packaging, volatile organic compounds, and performance.[21]

In August 2024, EPA released its latest edition of the Safer Choice and Design for the Environment Standard, its first update since 2015.[20] The updated standard strengthens the program's requirements and clarifies its language to further protect ecosystems and the health of all people, especially those who work with cleaning products. EPA also updated the Standard's packaging criteria, setting stronger requirements for recycling, energy efficiency, and reduction of hazardous chemicals.[20]

The Safer Choice webpage offers resources to support manufacturers and consumers. These include step-by-step documents and flowcharts to assist manufacturers through the certification process; a media kit; the latest edition of the Safer Choice and Design for the Environment Standard and Safer Chemical Ingredients list; and databases to help manufacturers and consumers explore Safer Choice–approved chemicals.

Figure 3:
Safer Choice label.
Source: EPA, 2024.[19]

EPA conducts annual audits to ensure that companies continue to comply with the updated Safer Choice and Design for the Environment Standard in light of new toxicology research and regulations.[22] EPA also hosts an annual awards ceremony to honor companies that avoid using hazardous chemicals in their products or product lines and support EPA's mission. Through a transparent materials certification and requirement process, the Safer Choice label helps EPA increase the number of safe and sustainable products on the market.[23]

3.4 RCRA Hazardous Waste Labels

Under the Resource Conservation and Recovery Act (RCRA) (40 CFR part 262.32), EPA has the authority to control hazardous waste labeling requirements.

When accumulating hazardous waste, a generator of waste must label containers with the words "Hazardous Waste" as well as the date the waste started to accumulate. When a generator is preparing hazardous waste for shipment, 40 CFR part 262.32(b)(1) specifies that the label must include the following language: "HAZARDOUS WASTE—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency." The label must also indicate the generator's name, address, and EPA identification number. In addition, hazardous material labels must indicate dangers such as flammability, explosiveness, and danger to the environment, in accordance with the DOT's regulations on hazardous materials found in 49 CFR part 172. Figure 4 shows the Class 9 Lithium Battery label required by the DOT on the exterior shipment packaging for lithium batteries.[24]

Figure 4:
Class 9 Lithium Battery label.
Source: DOT, 2023.[24]

The RCRA hazardous waste guidelines have helped create a comprehensive hazardous waste management system across the United States.[25] However, the regulation depends on EPA and the states to monitor new chemicals, develop and maintain a workforce that can identify and treat hazardous chemicals, and engage in long-term stewardship plans. While the RCRA hazardous waste label effectively communicates the presence of a dangerous substance, states and EPA must ensure that resources are in place to treat, research, and monitor the waste throughout the country.[25]

3.5 National Vehicle Mercury Switch Recovery Program

The National Vehicle Mercury Switch Recovery Program (NVMSRP) is a voluntary, shared responsibility program between EPA, vehicle manufacturers, and the environmental, steel, and recycling industries. NVMSRP began in 2006 with the aim of recovering 80 to 90 percent of mercury switches from scrap vehicles.[26,27] Prior to 2003, vehicle manufacturers made switches for anti-lock brake systems and convenience lighting using mercury, a neurotoxin. During the vehicle dismantling process, mercury from these switches may be released into the atmosphere. From there, it can make its way into waterways where it can contaminate wildlife and food webs and pose a health risk to people.[28] Through partnerships with over 10,000 recyclers and dismantlers, NVMSRP has safely recycled more than 6.8 million mercury switches and prevented the release of 7.6 tons of mercury into the atmosphere.[29]

NVMSRP has found success through strong collaboration and shared responsibility with dismantlers, steelmakers, and environmental groups. The End of Life Vehicle Solutions Corporation (ELVS), an organization created by the automotive industry, provides vehicle dismantlers nationwide with free mercury switch collection buckets, transportation, and disposal. ELVS is responsible for data collection, performing educational outreach, developing best practices for mercury disposal, and contracting with environmental service companies for mercury switch removal. The ELVS website also provides educational materials for partners, such as tutorials for dismantlers on how to remove mercury switches.[30]

3.6 U.S. Fuel Economy Labels

EPA and the DOT's National Highway Traffic Safety Administration first developed U.S. fuel economy labels in 1974, and the labels were updated most recently in 2013 with the goal of providing consumers with more robust information on fuel efficiency and environmental performance.[31,32] As shown in Figure 5, the 2013 fuel economy labels indicate fuel economy, fuel costs, and environmental impacts for new vehicles.[32] Each label includes a

greenhouse gas emission rating, a smog rating, and a quick response (QR) code that directs consumers to additional information regarding environmental sustainability.[32] Labels are physically affixed to cars being sold and are also available online for consumers to research.[32] All passenger cars and trucks (model year 2013 or newer) sold by dealers must bear the improved fuel economy label.[33] The improvement of the fuel economy label demonstrates the importance of creating adaptable labels that can evolve with new technologies.

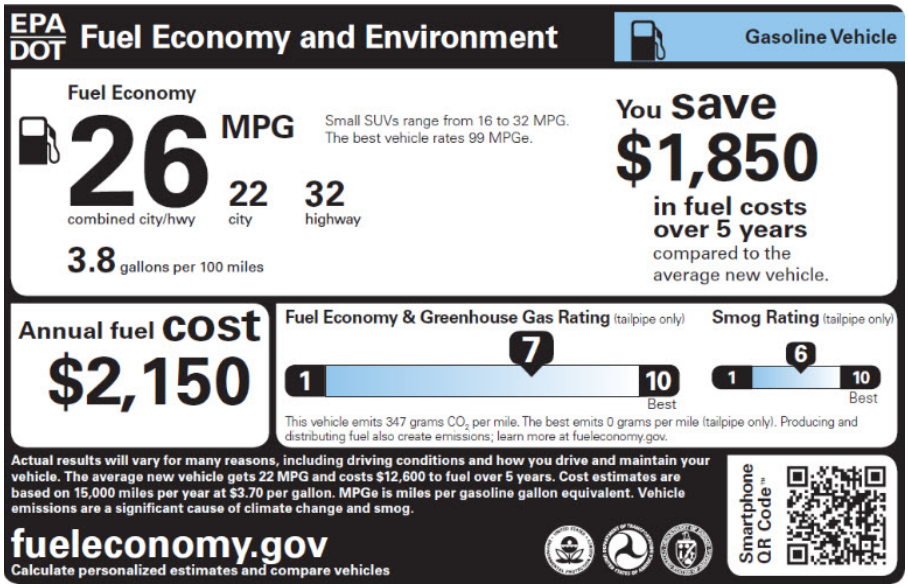


Figure 5: Fuel economy label for gasoline vehicle. ***Source: DOE, n.d.***[34]

4 Other Federal Labeling Programs

4.1 EPEAT

EPEAT is an ecolabel managed by the Global Electronics Council that helps purchasers identify more sustainable technological products and holds manufacturers accountable for selling products with transparent supply chains.[35] In addition to the EPEAT ecolabel, the program offers a product registry and a benefits calculator that help point consumers toward sustainable electronics.[36] All products on the EPEAT registry must meet EPEAT criteria and be independently audited by a conformity assurance body before receiving an EPEAT label. The EPEAT criteria cover core sustainability areas, including climate change, circularity, and environmental social governance, across the electronic supply chain.

Status markers and public acknowledgement help EPEAT incentivize participating brands to continue to meet the required criteria. EPEAT has expanded its core EPEAT+ ecolabel to include “EPEAT Climate+” and “EPEAT Climate+ Champions,” presenting manufacturers with the opportunity to become industry leaders in making environmentally and socially sustainable products.[36] Additionally, the program created three certification tiers—bronze, silver, and gold—with each tier representing products that meet a specific set of criteria.[36] EPEAT also hosts an annual awards ceremony to honor organizations that are using EPEAT-registered technological products and have an active organizational sustainable purchasing policy.[37]

EPEAT develops its criteria through a voluntary consensus process that involves a range of company representatives from across the electronics life cycle. As sustainability research advances and new products and categories enter the market, EPEAT makes updates to the criteria. EPEAT provides transparency through public reports on the annual monitoring of active EPEAT registry products.[36]

4.2 Food Nutrition Labels

Food nutrition labels can be voluntary or mandatory. As a result, food product labels can bear a wide range of claims and information. The Nutrition Labeling and Education Act of 1990 requires food manufacturers to place a Nutrition Facts Label on their products. Developed by the U.S. Food and Drug Administration, the label presents science-based dietary information and is designed to help consumers make better informed food choices.[38] However, manufacturers can also include voluntary labels on their products that describe the products' characteristics with the intention of influencing a consumer's purchasing habits. These voluntary labels include "raised without antibiotics," "low-fat," and "organic."[38] A 2018 article published in the *American Journal of Preventative Medicine* investigated the influence of food and beverage labeling on consumer behaviors, industry behaviors, and health outcomes.[39] The article synthesized and analyzed the results of 60 intervention studies performed across 11 countries between 1990 and 2014. The study concluded that food labeling can positively impact human health by influencing industries to reduce levels of sodium and artificial trans fats in their products, leading to higher rates of consumer vegetable consumption.[39]

A 2019 study highlighted the importance of consumer education in the United States to complement labeling.[40] The study noted that "consumers who have higher levels of education and nutrition knowledge are typically able to comprehend label information and compare foods using labels easier than others."[40] The study also highlighted a 1996 research paper that uncovered the importance of education in contributing to Americans' understanding of nutrition labels.[41]

4.3 Pesticide Labels

Due to the potential impacts of pesticide use on health and the environment, EPA requires all pesticide products to include a label, as directed by 40 CFR part 156. Studies on the effectiveness of pesticide labeling have typically focused on how to *improve* labeling effectiveness, rather than on determining whether labels are more effective than no labels. A 2024 study, "Pesticide Labels Do Not Effectively Communicate Toxicity Risks," evaluated the effectiveness of existing pesticide labels in terms of their format and language and found that eye-catching pictorial labels are significantly more effective than signal words.[42] The study tested two label display formats—one that used traffic light colors, and one that used a skull symbol—and found that "consumers' correct assessment of toxicity level dramatically improves from 56 percent under the existing signal word label to 88 percent under the traffic light and 87 percent under the skull intensity labels."[42]

A 2021 study, "Bridging Safety Language Disparities in Orchards: A Pesticide Label Mobile App," looked at the effectiveness of a mobile application (app) that displays pesticide label information in Spanish and English.[43] This tool was developed to address the safety disparities among orchard workers resulting from language barriers. The results determined that the app improved Latinx worker safety. The study emphasized that "the overwhelming majority of Pacific Northwest agricultural workforce is Spanish-speaking despite critical pesticide safety information being provided on lengthy product label documents in technical English."[43]

4.4 OSHA Hazard Communication Labels

OSHA's Hazard Communication Standard ensures chemical safety in the workplace. It requires that employers provide workers with written identification and safety information (i.e., labels and safety data sheets) about the chemicals in their workplace, as well as worker training.[45] OSHA's hazard communication labels align with the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals. The labels and pictograms used to identify hazardous chemicals could serve as a model for consumer education about the potential risks of improper handling or disposal of batteries. As shown in Figure 6, labels must include: employer name, address, and telephone number; product identifier; signal word (e.g., "Danger" or "Warning"); hazard statement(s); precautionary statement(s); and pictogram(s).[44]

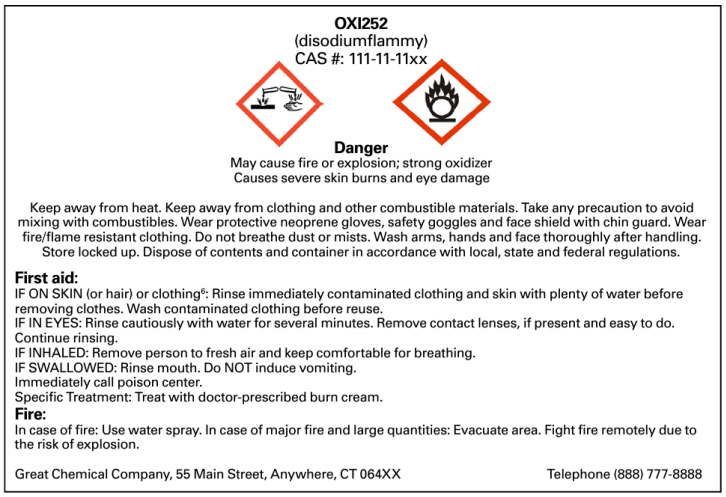


Figure 6: Sample hazard communication label. *Source: OSHA,* 2012.[44]

In 2012, OSHA updated its hazard communication label, featured in Figure 6, to more closely align with the revision of the Globally Harmonized System of Classification and Labelling of Chemicals.[46] OSHA reports that these changes have helped workers avoid dangerous chemicals and increase productivity. The changes have also decreased barriers to comprehension by simplifying the label contents.[18] These improvements demonstrate the importance of using icons to simplify messaging.

5 Labeling Program Challenges and Recommendations

To achieve their successes, the labeling programs featured in Sections 3 and 4 have had to overcome significant challenges. Developing a voluntary program on a national scale requires buy-in from consumers, brands, retailers, manufacturers, and processors across the product's life cycle.

Box 1 outlines some of the common challenges faced by labeling programs.

Box 1: Challenges Faced by Labeling Programs

Voluntary

- **Challenge:** Because these labeling programs are voluntary, manufacturers and retailers are not required to participate, which can limit each label's reach.
- **Recommendation:** Voluntary labeling programs must work to incentivize participation among battery manufacturers and retailers by understanding and catering to the needs of different audiences.

Lack of standardization among required markings and labels

- **Challenge:** Products, including electronics, are required to include many labels for compliance with international laws and some of these labels may conflict or cause confusion to consumers. For

Box 1: Challenges Faced by Labeling Programs

example, labels indicating recyclability may include the Mobius loop/chasing arrows symbol (e.g., How2Recycle) or the French Triman, which are not internationally standardized.

- **Recommendation:** The use of labels should be harmonized to ensure consistent messaging. Reducing the number of labels required for compliance, especially if multiple labels or markings are used to indicate the same message and may cause confusion, could reduce the burden to manufacturers to add multiple labels on products.

Consumer education

- **Challenge:** For labels to be effective and lead to action, consumers must understand the symbols used on the labels. For example, although consumers are familiar with the Mobius loop/chasing arrows symbol, the symbol itself is not standardized and sometimes leads to confusion.[6]
- **Recommendation:** Labeling programs should ensure that their educational programs are robust and provide clear guidance, with symbols that have consistent uses and meanings.

Lack of call to action

- **Challenge:** Symbols or images on a label may mislead consumers by not including specific instructions on the proper disposal or recycling of a battery or battery-containing product.
- **Recommendation:** Labels need to direct consumers on what to do with the product at the end of its life. This can be done through text that accompanies symbols to provide clearer guidance to the consumer.

6 Next Steps

Moving forward, EPA will continue engaging with parties across the battery life cycle to develop the voluntary battery labeling guidelines as required by the BIL. Specifically, in 2025, EPA will host working sessions on mid-format and large format batteries in partnership with other federal agencies, battery manufacturers, retailers, industry leaders, and state, local, and Tribal governments. The goal of these sessions is to build on feedback received on effective label content and design considerations from the small format battery engagement sessions. EPA will assess this feedback to inform the development and implementation of the guidelines. The guidelines will focus on standardizing necessary information for different audiences to identify batteries and battery-containing products and increase proper EOL management.

To bolster adoption of the voluntary battery labeling guidelines and increase their effectiveness, EPA will conduct additional research on consumer education and messaging based on feedback gathered from working session participants. EPA will develop and test messaging to ensure that the labeling guidelines resonate and meet the needs of priority audiences, including municipalities, consumers, and recyclers. Additionally, EPA will create a collection best practices toolkit to accompany the voluntary guidelines, which will help to improve EOL battery management by increasing access to collection sites. EPA will also, in coordination with DOE, develop a battery EPR framework that addresses battery recycling goals, cost structures for mandatory recycling, reporting requirements, product design, collection models, and transportation of collected materials.

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