

A Deeper Look at OSHA's Proposed GHS Revision 7 Update to the HazCom Standard



In February 2021, OSHA published a long-awaited [notice of proposed rulemaking \(NPRM\)](#) that would update its Hazard Communication Standard (HazCom) to align with Revision 7 of the UN's Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

OSHA had indicated as early as [Spring 2018](#) that updates to the HazCom Standard were a top regulatory priority for the Agency. Yet, a proposed rulemaking had been repeatedly delayed. Now that the NPRM is finally published, we're able to see the types of changes we can expect, and they're likely to have a far reaching impact throughout the supply chain.

Here, we'll take a look at the NPRM, focusing on the major proposed changes and the strategies businesses can take to prepare.

New Classifications for Aerosols, Desensitized Explosives, and Flammable Gases

The NPRM proposes several changes to how certain chemicals are classified to align with the classification criteria of those chemicals in GHS Revision 7.

Aerosols

OSHA is proposing to follow GHS Rev. 7 (UN GHS, 2017, Document ID 0060) by expanding the existing Flammable Aerosols hazard class (appendix B.3) to include non-flammable aerosols, as well as flammable aerosols. Non-flammable aerosols will now be under a the newly-created Category 3, while flammable aerosols will be under the newly-created Category 1 or Category 2.

Under GHS Rev. 3 and the current HazCom Standard, Chapter 2.3 and appendix B.3, respectively, were titled "Flammable Aerosols." Under GHS Rev. 3, the hazards characteristic to non-flammable aerosols were either not classified at all, or more likely, were classified in another health hazard class

or physical hazard class (e.g., gases under pressure) (UN GHS, 2009, Document ID 0085). Some products were likely to have been classified as both flammable aerosols and gases under pressure.

The change in classification is occurring because classification under HazCom 2012 was based largely on information from the transportation sector, which meant that most aerosols were classified as gases under pressure. Since that time, OSHA has come to the realization that the current classification does not adequately represent the full spectrum of varying aerosol hazards, because aerosol containers have different characteristics including failure mechanisms. Under the proposal, flammable aerosols would be classified in existing Categories 1 and 2 and bear the flame pictogram, while non-flammable aerosols would be in a new Category 3 and have no pictogram.

OSHA reports that most aerosols are classified as gases under pressure by GHS Rev. 3 (and accordingly under the existing HazCom Standard) because of the design criteria of the aerosols ([ERG, 2015, Document ID 0163](#)) under [DOT regulations](#). Therefore, aerosol manufacturers can expect the proposed classification changes — if pushed through to the final rule — to have a significant impact on the authoring of SDSs for affected products.

Desensitized Explosives

OSHA is also proposing to align with GHS Rev. 7 (UN GHS, 2017, Document ID 0060) by adding a new physical hazard class for desensitized explosives. There will be 4 categories (1,2,3, and 4) within this new hazard class.

Desensitized explosives are chemicals that are treated in such a way as to stabilize the chemical, or reduce or suppress their explosive properties. These types of chemicals can pose a hazard in the workplace if the stabilizer is removed, either as part of the normal work process or during storage of the chemical. Therefore, it is urgent that the hazards be identified and appropriately communicated.



These chemicals are currently classified as explosives in HazCom 2012, with precautionary statements (e.g. “keep wetted”) used to address additional concerns about measures necessary to keep the chemical stabilized. OSHA concurs with UN GHS Rev 7 that a separate hazard class is warranted to ensure that specific hazards are communicated.

OSHA states that even though “desensitized explosives” is a new hazard class, the explosion hazards are well-known, and should already be included in current [hazard training](#). For example, hazard training should cover that if water, or another wetting solutions used to desensitize an explosive happens to dry out, an explosion could occur. Of course, OSHA doesn’t believe that hazard training alone is sufficient, and it maintains that the new classification will further improve workplace safety.

Flammable Gases

OSHA is proposing to subdivide Category 1 of the Flammable Gases hazard class into two subcategories (1A and 1B), and to specify that pyrophoric gases and chemically unstable gases are to be classified as Category 1A. These proposed changes would provide more detailed information about flammable gas hazards, and they correspond to changes made in GHS Rev. 7 (UN GHS, 2017, Document ID 0060).

OSHA states in the NPRM that under HazCom 2012, almost all flammable gases are classified as Category 1, so there are no distinctions drawn between gases with wide range of flammable properties. The proposed changes would give downstream users a better understanding of the severity of the hazards associated with flammable gases. Specifically, downstream users could use this information to take appropriate precautions under all conditions (i.e. transport, handling and use) or determine if an available substitute chemical is less hazardous.

Key Industries Affected

Starting on page 49 of the proposed rule, there is a table showing some of the major industries (in terms of numbers of facilities and numbers of employees) that are affected by the proposed changes.

These include:

- Chemical Manufacturing (and all subsectors);
- Oil and Gas Extraction;
- Petroleum & Coal Products Manufacturing;
- Plastics and Rubber Products Manufacturing
- Merchant Wholesalers (both durable and non-durable goods)
- Non-Metallic Mineral Product Manufacturing

In the NPRM, OSHA states that their list comes from its search of the North American Industry Classification System (NAICS) for industries that manufacture products impacted by its proposed changes to hazard classifications.

New Labeling Provisions for ‘Small’ and ‘Very-Small’ Containers

OSHA received a great deal of feedback and questions from stakeholders since the publication of the 2012 HazCom final rule on the challenges of implementing **shipped container** label requirements for small containers. Proposed changes in the NPRM are intended to address those implementation challenges.

Proposed paragraph (f)(12), which addresses labeling of small containers, would specify that chemical manufacturers, importers and distributors would be granted allowances to include less information on the shipped label when they can demonstrate that it is not feasible to use pull-out labels, fold-back labels or tags to provide the full label information as required by paragraph (f)(1).

As proposed in paragraph (f)(12)(ii) of the NPRM, containers with a volume capacity of 100 ml or less may include an abbreviated label specifying the product identifier, pictogram(s), signal word, chemical manufacturer’s name and phone number, and a statement that the full label information is provided on the immediate outer package. This revision would codify guidance for small container shipped labels that OSHA had previously published in a [2013 letter of interpretation \(LOI\)](#).

Paragraph (f)(12)(iii) further proposes that manufacturers, importers and distributors may include only the product identifier on containers with a volume of 3 ml or less (referred to as “very small containers” in the NPRM) if they can demonstrate that a full label would interfere with the normal use of the container.

Stakeholder concerns over requirements and guidance for small labels had long been a question at OSHA & UN SCEGHS meetings. The NPRM proposes a new allowance not provided in any previous OSHA guidance, and accounts for stakeholder feedback on the difficulty posed when labels on very small containers interfere with the normal use of those containers.

However, there’s an important caveat that applies to both “small” and “very small” containers. The NPRM states that manufacturers, importers and distributors who take advantage of either of the label allowances discussed above must provide the full label information required in paragraph (f)(1) for each chemical on the outer packaging containing the



small immediate containers of the chemicals. Additionally, paragraph (f)(12)(iv)(B) of the NPRM proposes that manufacturers must include a statement on the outer packaging stating that the small container(s) must be stored in the outer package bearing the complete label when not in use.

OSHA's Preliminary Economic Analysis (PEA) on the impact of the label changes, included in Section VII of the Federal Register notice, states that the allowance for small containers will result in little or no economic benefit, since they believe that affected manufacturers already were aware by now of the allowance given by the 2013 LOI, which would only be codified, not added to, by the NPRM. It's a different story for the "very small containers" of 3 ml capacity or less. Because OSHA had not previously provided additional allowances for these containers, the proposal within the NPRM would result in a significant cost savings for affected chemical manufacturers. Based on OSHA's PEA, it maintains the affected manufacturers would be concentrated in a few industry sectors like "Other Basic Chemical Manufacturing, Inorganic and Organic" (NAICS 325180 and 325199, respectively) and Pharmaceutical and Medical Manufacturing (NAICS 3254—encompassing 6-digit NAICS 325411, 325412, 325413, and 325414).

Updating Selected Hazard and Precautionary Statements for Clearer, More Precise Hazard Information

OSHA is proposing to revise several hazard and precautionary statements to align with GHS Revision 7. OSHA is also proposing to add new paragraph C.2.4.7 to note that "precautionary statements may contain minor textual variations from the text prescribed elsewhere in appendix C (e.g., spelling variations, synonyms or other equivalent terms), as long as those variations assist in the communication of safety information without diluting or compromising the safety advice." This proposed new paragraph would also provide that any variations must be used consistently throughout the label and SDS.

The proposed rule would also update Appendix C to allow pictograms for Hazards Not Otherwise Classified (HNOCs) on shipped container labels. The NPRM would define this hazard class as "HNOC (non-mandatory)." The class would be identified by the "exclamation mark" pictogram.

In a 2016 joint guidance document with [Health Canada](#) (OSHA, 2016, Document ID 0103), OSHA had previously clarified that manufacturers could use the exclamation mark pictogram for HNOCs (although not required to) in a 2016 joint guidance document with [Health Canada](#) (OSHA, 2016, Document ID 0103). The NPRM codifies the allowance into the text of the HazCom Standard itself. The NPRM proposes to revise Figure C.1—Hazard Symbols and Classes to include "HNOC (non-mandatory)" as a hazard identified by the exclamation mark pictogram on the impact of the label changes, on the impact of the label changes. This proposed change more formally addresses OSHA's agreement with Health Canada to permit the exclamation mark pictogram for HNOCs, and helps the US better align its shipped container labeling with Canada's.

OSHA is also proposing to add a new paragraph, C.2.4.10, to further address cases where substances or mixtures may trigger multiple precautionary statements for medical responses. Consistent with GHS Rev. 7 (UN GHS, 2017, Documents ID 0060), OSHA is proposing principles for addressing situations where a substance or mixture is classified for a number of hazards and triggers multiple precautionary statements for medical responses (e.g., calling a poison center/doctor/... Proposed paragraph C.2.4.10 would provide for a system of prioritization for precautionary statements. Under proposed C.2.4.10(a), labels would usually need only include one precautionary statement reflecting the response at the highest level with the greatest urgency, combined with at least one route of exposure or symptom "IF" statement.

Updating Labeling Requirements for Packaged Containers "Released for Shipment"

OSHA is proposing to update paragraph (f)(11) to provide that chemicals that have been released for shipment and are awaiting future distribution need not be re-labeled to incorporate new significant information about hazards. However, the chemical manufacturer or importer would still have to provide the updated label for each individual container with each shipment. The purpose of this proposed requirement is to account for the long distribution cycles of some products and the potential hazards workers could face in re-labeling the immediate containers of hazardous chemicals (e.g., chemical exposures, ergonomic issues).



OSHA is simultaneously proposing to add a requirement, to section (f)(1)(vii) of the standard, for a shipped label to include the date a chemical is being released for shipment. OSHA believes the inclusion of this date will help manufacturers and distributors more easily determine when new hazard information is available.

OSHA states that this proposed chemical-release date requirement for the the label, came about from feedback the agency began receiving shortly after the 2012 final rule went into effect. Many manufacturers described obtaining new hazard classification information for a chemical after they had already secured and palletized containers for shipment. In such cases, attempting to remove and replace the labels could have potentially placed workers at risk of injury or chemical exposure. The proposed change would enable manufacturers to provide the updated hazard information with the shipment for containers already released for shipment rather than needing to relabel the containers, resulting in greater protection of the chemical containers and workers¹.

At an OSHA public hearing on the HazCom Standard held September 21–23, 2021, stakeholders provided a great deal of feedback on the changes contained within the NPRM. Commenters agreed that OSHA's proposed changes would help avoid exposure and injury risks that may result from trying to remove labels from shipped containers already released for shipment, but pointed out that sending updated shipped labels to users may create other risks. For instance, if end-users receive a stand-alone shipped label with the shipment, they may not affix it to the correct container. Some commenters advised including the information in shipping papers or in supplemental documentation instead. It remains to be seen whether, or how, OSHA will take into account this feedback in the process of developing a final rule.

Labels for Bulk Shipments of Hazardous Chemicals

OSHA is proposing to add new paragraph (f)(5)(ii) to address the transport of bulk shipments of hazardous chemicals (e.g., in tanker trucks or rail cars). The proposed paragraph specifies that labels for bulk shipments of hazardous chemicals may either be on the immediate container, or may be transmitted with shipping papers, bills of lading or other technological or electronic means so that the information is immediately available in print to workers receiving the shipment.

The proposed paragraph would also codify a policy first introduced by OSHA and the Pipeline Hazardous Materials Safety Administration (PHMSA) in 2016 that clarified

procedures for proper labeling of bulk chemicals in transport (PHMSA, 2016, Document ID 0244), and promotes better alignment with DOT regulations.

The OSHA NPRM also proposes a new definition of "bulk shipment" that partially overlaps with, but also partially diverges from, DOT's definition of "bulk packaging." For that reason, stakeholders at OSHA's public hearing pointed out that the difference in definitions undermines OSHA's goal to better align HazCom with DOT regulations. Several participants suggested that OSHA simply incorporate the DOT definition by reference, which would not only address the discrepancy but also ensure that the alignment continues whenever DOT may update its definition in the future.

Trade Secrets on SDSs

OSHA is proposing to allow manufacturers, importers and employers to withhold a chemical's actual concentration or concentration range on SDSs as trade secret/confidential business information (CBI). When an ingredient's actual concentration or concentration range is claimed as a trade secret, OSHA would require the SDS to specify a concentration range selected from a prescribed list of ranges. OSHA notes that these prescribed concentration ranges are identical to the ranges required by Canada's Hazardous Product Regulations (HPR). This is consistent with continuing efforts by the US-Canada Regulatory Cooperation Council (RCC) to further align each country's hazard communication systems and requirements.

SDS Section 2 – Hazard Identification

The NPRM proposes changes to paragraph (d)(1) to state that for each chemical, the chemical manufacturer or importer shall determine the hazard classes and, where appropriate, the category of each class that applies when the chemical is being classified under normal conditions of use and foreseeable emergencies. OSHA stated in an April 13, 2021 webinar organized by Society for Chemical Hazard Communication (SCHC) that they view this addition as reiterating OSHA's position, given in paragraph 1910.1200 (b)(2) of the HazCom Standard and clarified in letters of interpretation dating back to 2004, that hazard classification must cover the normal conditions of use and foreseeable emergencies. Additionally, OSHA stated that these identified hazards would need to appear on the shipped container labels.

When a caller during the SCHC call asked for clarification on this point, OSHA cited the example of combustible dust that may be generated during use of a product. The OSHA representative stated that if regular use of a product resulted in combustible dust, the manufacturer would need to account for that hazard to indicate it on the shipped container label.



On a related but somewhat different issue, OSHA is proposing changes to Section 2 of the SDS to require that hazards identified under normal conditions of use resulting from a chemical reaction must appear on the SDS, even though these hazards do not need to be listed on the label.

This proposed change represents stricter classification requirements than those that currently exist under HazCom. The proposed text clearly states that a chemical must be classified according to normal conditions of use and foreseeable emergencies, as well as hazards associated with a change in physical form or resulting from a reaction with other chemicals under normal conditions of use. According to the proposed rule, “known intermediates, by-products and decomposition products that are produced during normal conditions of use or in foreseeable emergencies must be addressed in the hazard classification.” As such, this will create new classification challenges for certain industry sectors, such as metal and alloy manufacturing where products regularly undergo chemical reactions under normal conditions of use.

Commenters at the public hearing held on September 21–23, 2021 raised a number of objections to these requirements, especially the proposed obligation to consider potential downstream reactions and changes in physical state. The feedback provided by these commenters can be grouped into three primary arguments:

- 1)** Chemical manufacturers are too far “upstream” in the supply chain to know all the possible uses of their chemical products, or all the associated physical conditions and other chemicals that it may come in contact with. Trying to obtain that information across all the different users and uses of a single product would be extremely difficult, if not impossible.
- 2)** Even if manufacturers theoretically could get that information regarding all downstream uses, many of its end users may have proprietary processes that prevent or complicate the sharing of that information.
- 3)** If chemical manufacturers managed to overcome both of the above two obstacles, they’d still have the daunting task of compiling a potentially huge volume of information for inclusion in Section 2 of the product SDS. The presence of all of these details could significantly compromise the effectiveness of the SDS and defeat its intended purpose as a source of information about chemical hazards for downstream users. For one, it may confuse users by including details about theoretical reactions and form changes that don’t apply to their own uses of the chemical, and second, it may make the SDS document so long as to be virtually unusable.

Once again, we’ll have to see how or if OSHA chooses to address these objections when creating its final rule.

Potential Changes Associated with GHS Revision 8

The proposed changes discussed so far are part of OSHA’s alignment of the HazCom Standard with GHS Revision 7 (or to address implementation issues with HazCom 2012).

In addition, OSHA is seeking comment on whether to include several specific provisions of GHS Revision 8, specifically:

- **Appendix A:** Revision to include expanded use of non-animal test methods for skin corrosion/irritation classification.
- **Appendix B:** Additional changes to classification of aerosols, including:
 - Classification based on text in a table rather than decision logic
 - New hazard category within aerosols class of “chemicals under pressure”
- **Appendix C:** Revision of medical precautionary statements to reduce ambiguity over actions to be taken (e.g. indicating when someone should call a poison control center instead of a medical professional)

OSHA will evaluate feedback from stakeholders on each of the above provisions from GHS Revision 8 and determine whether to incorporate them into the final rulemaking.

In response to a question from a caller on the SCHC call, OSHA stated that they have no plans to completely revisit the rulemaking process to base the majority of proposed changes on GHS Revision 8. The rulemaking process is too lengthy for OSHA to move the goal post. Instead, OSHA will evaluate feedback from stakeholders on each of the above provisions from GHS Revision 8 and determine whether to incorporate them into the final rulemaking. Further, OSHA cited that aligning to Rev 7 kept the US aligned with its closest trading partners which are also aligned/aligning to Rev 7 — Canada, EU, New Zealand, and Australia.

Frequency of Future GHS Updates to HazCom Standard

OSHA requested public comment on whether the agency should adopt a schedule for updates to the HazCom Standard (e.g., every four years or every two revisions of GHS) or wait until there are significant changes to GHS before initiating rulemaking.



OSHA observes that more frequently updating HazCom to align with newer revisions of the GHS may provide greater protection for workers and reduce uncertainty for manufacturers, distributors and employers.

Stakeholders expressed a range of opinions on the options for schedules of future updates during the public hearings held from September 21–23, 2021. Some agreed that a fixed interval for future updates (e.g., every 2 years) would provide industry with more predictability, while others maintained it might be wasteful to commit to such a schedule, since there won't necessarily be significant updates in that period of time.

Timeline for Transition to New Requirements

OSHA is proposing to implement the revised provisions over a **two-year phase-in period**. OSHA proposes that the revisions become effective 60 days after the publication date (paragraph (j)(1)) and that chemical manufacturers, importers and distributors evaluating substances comply with all modified provisions of HazCom no later than one year after the effective date (paragraph (j)(2)). OSHA is also proposing that chemical manufacturers, importers, and distributors evaluating mixtures comply with all modified provisions no later than two years after the effective date (paragraph (j)(3)).

During the public hearing held on public hearings held from September 21–23, 2021, multiple stakeholders expressed concerns about the proposed timetable for compliance. There was wide agreement that the timeframe was much too short, with one participant proposing an alternate timeframe of two years for manufacturers of substances and three years for manufacturers of mixtures.

Of course, the timing of the final rule itself is the biggest wildcard in all of this. During the Fall Meeting for the Society for Chemical Hazard Communication (SCHC), Janet Carter, Senior Health Scientist for OSHA, stated that she does not expect OSHA to publish a final rulemaking until December of 2022. We'll have to see if OSHA publishes the final rule in the *Federal Register* by then and if it elects to adjust the phased-in compliance timeline based on stakeholder feedback.

The Big-Takeaways

This NPRM represents the first significant update to the HazCom Standard since OSHA aligned the standard with GHS Revision 3 back in 2012.

With modifications to existing hazard classifications and the addition of new hazard classes, hazardous chemical manufacturers, importers and distributors in the US will need to re-evaluate the hazards of the products they sell or import into the country to ensure product hazards are classified according to GHS Revision 7 hazard classification criteria.

Therefore, many SDSs and shipped container labels for chemicals impacted by the proposed changes will need to be re-authored to reflect changes in chemical hazard classification or information and ensure compliance with updated requirements. Specific industry sectors identified by OSHA within the NPRM including chemical manufacturing, oil and gas extraction, and plastics and rubber products manufacturing will be more significantly affected by these classification changes.

Downstream users will also need to assess whether they have chemicals affected by the revised classifications (e.g., aerosols, desensitized explosives, flammable gases) and prepare to manage the influx of updated SDSs as they enter the workplace. If they have chemicals affected by the proposed rule, they would also need to revise their written HazCom Plans and HazCom training to account for new classifications and new hazard and precautionary statements.

No matter where you are in the chemical supply chain, there will be a lot of work to do, in order to stay on top of new HazCom requirements. With the right tools in place, you and your workforce will be better prepared.



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