Downstream Impacts of OSHA HCS 2024 to HMIS, NFPA, and SARA 311/312

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September 23, 2025

Agenda

- Quick review: Changes in HCS 2024
- How are downstream regulations affected?
- Bridging the gap
- Q & A

Speaker

Zack has over 10 years of experience in the field of product stewardship with a focus on SDS authoring and the systems that support it. He holds a Master of Science in Product Stewardship (MSPS), is a Certified Professional Product Steward (CPPS), and is an SDS Registered Processional (SDSRP). In his current position as a Product Owner, he oversees the continuous improvement of 3E ERC+ Integrated Content for SAP, working with global regulatory experts and content developers to provide customers with compliance solutions.

Zachary Mikan

Product Owner, 3E ERC+

3E

01 Quick review: Changes in OSHA HCS 2024

Key changes in OSHA HCS 2024

New Hazard Classes/Categories


Aerosols 3


Chemically unstable gases


Chemicals under pressure


Corrosive to the respiratory tract


Desensitized explosives


Unstable explosives

Changed Hazard Classes/Categories


Flam. aerosols 1 → Aerosols 1


Flam. aerosols 2 → Aerosols 2


Flam. gases 1 → Flam. gases 1A & 1B


Pyrophoric gases

02 How are downstream regulations affected?

Downstream impacts

SARA 311/312

- Hazardous Chemical Inventory Reporting
- Communicate relevant information (including hazards) to community emergency response organizations

NFPA 704

- Hazardous Materials Rating System designed to communicate acute hazards to first responders in the case of a fire or spill

HMIS

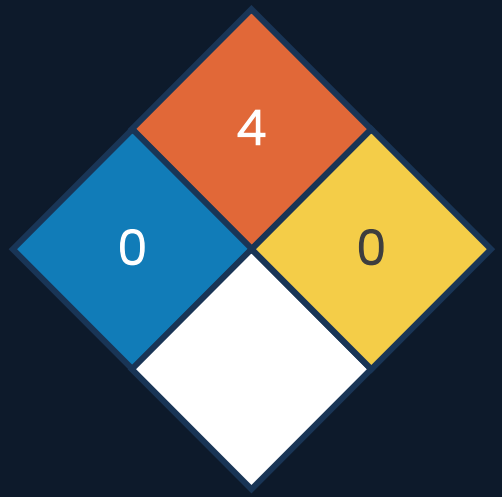
- Labeling system that may be used as part of an overall HazCom program. Expands upon the NFPA diamond to include chronic hazards and is aimed towards day-to-day workplace safety.

~~Flammable~~ Aerosols 1
Chemicals under pressure 1

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
- ☐ Gas under pressure (compressed gas)
- ☐ In contact with water emits flammable gas
- ☐ Combustible Dust
- ☐ Hazard Not Otherwise Classified

SARA



NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

~~Flammable~~ Aerosols 2
Chemicals under pressure 2

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
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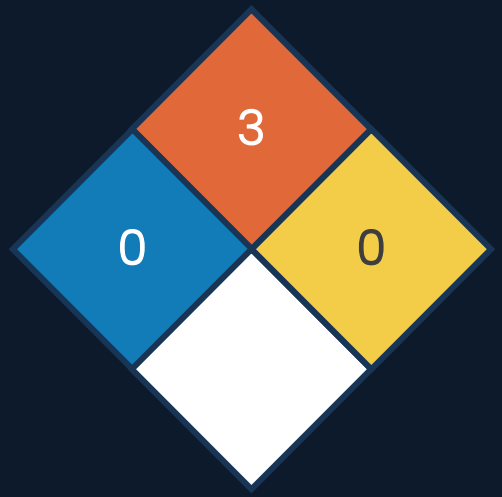

NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

Aerosols 3
Chemicals under pressure 3

Physical Hazards

- ☐ Explosive
- ☐ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
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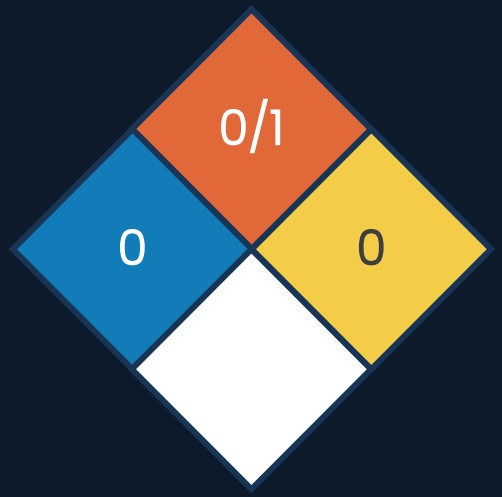

NFPA

HEALTH	/	0
FLAMMABILITY		0/1
PHYSICAL HAZARD		0

HMIS

Pyrophoric gases

Physical Hazards

- ☐ Explosive
- ☐ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☒ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
- ☐ Gas under pressure (compressed gas)
- ☐ In contact with water emits flammable gas
- ☐ Combustible Dust
- ☐ Hazard Not Otherwise Classified

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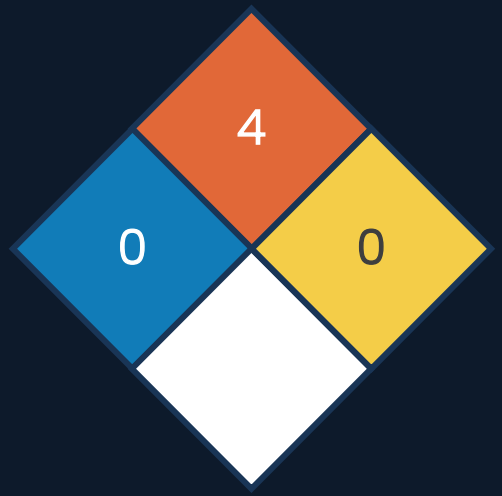


NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

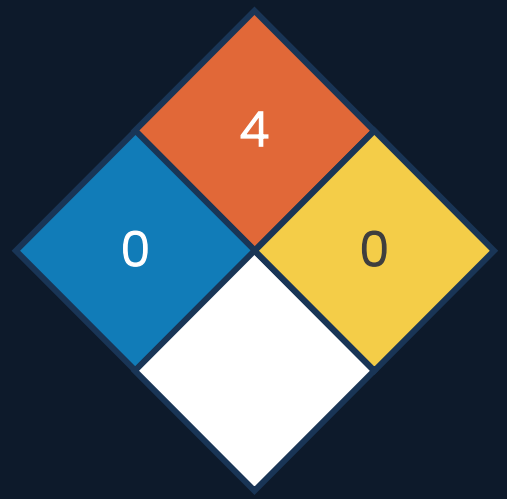
Put your thinking caps on

Flammable gases 1A

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
- ☐ Gas under pressure (compressed gas)
- ☐ In contact with water emits flammable gas
- ☐ Combustible Dust
- ☐ Hazard Not Otherwise Classified

SARA



NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

Flammable gases 2

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
- ☐ Gas under pressure (compressed gas)
- ☐ In contact with water emits flammable gas
- ☐ Combustible Dust
- ☐ Hazard Not Otherwise Classified

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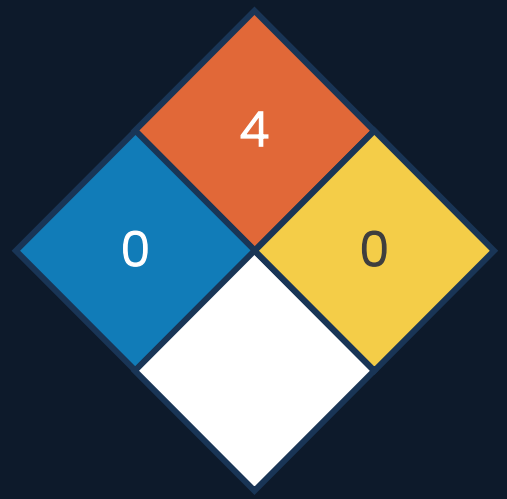


NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

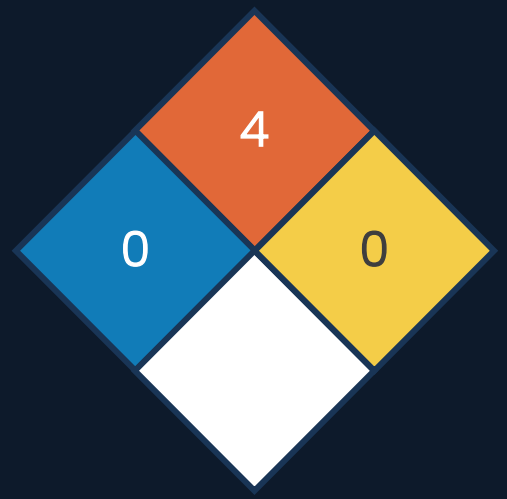
HMIS

Flammable gases 1B

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
- ☐ Gas under pressure (compressed gas)
- ☐ In contact with water emits flammable gas
- ☐ Combustible Dust
- ☐ Hazard Not Otherwise Classified

SARA



NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

Chemically unstable gases

- "a flammable gas that is able to react explosively even in the absence of air or oxygen" – GHS Rev. 7 2.2.1.3

Chemically unstable gas	**A**	Flammable gases which are chemically unstable at 20°C and a standard pressure of 101.3 kPa
	B	Flammable gases which are chemically unstable at a temperature greater than 20°C and/or a pressure greater than 101.3 kPa

- NFPA – no 1:1 mapping for instability. Category A is at STP, so, a rating of 4 is most likely. Category B is at elevated conditions, so depending on the Properties, a rating of 1, 2, or 3 may be appropriate.

Table 7.2 Degrees of Instability Hazards

Degree of Hazard
4 — Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures
3 — Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction but that require a strong initiating source or must be heated under confinement before initiation
2 — Materials that readily undergo violent chemical change at elevated temperatures and pressures
1 — Materials that in themselves are normally stable but that can become unstable at elevated temperatures and pressures
0 — Materials that in themselves are normally stable, even under fire conditions

Chemically unstable gases

- HMIS – does not fit into one of the 8 sub-categories for physical hazards:
  - Explosives
  - Oxidizers
  - Gases under pressure
  - Self-reactive substances
  - Self-heating substances
  - Water reactive substances
  - Organic peroxides
  - Metal corrosives

- SARA – Not a defined physical hazard, could report as an HNOC since there is no other option; however, this is not an HNOC under the OSHA HCS.

Chemically unstable gases

Physical Hazards

- ☐ Explosive
- ☒ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
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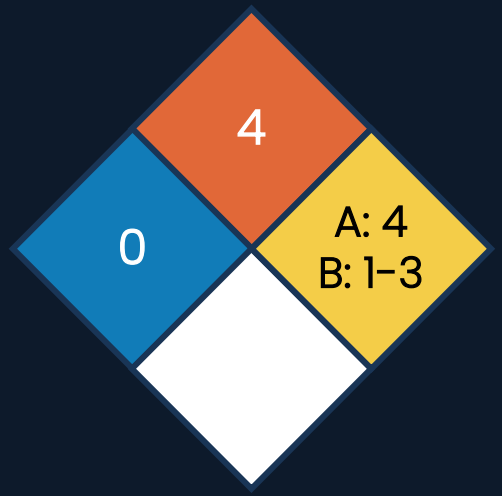

NFPA

HEALTH	/	0
FLAMMABILITY		4
PHYSICAL HAZARD		0

HMIS

Let’s increase the difficulty!

Desensitized explosives

- SARA – Not a defined physical hazard
- NFPA/HMIS – Not addressed, since we're lowering the risk of an explosive, how are explosives treated?

Explosives	NFPA	HMIS
Division 1.1	0 1 4	0/ 1 4
Division 1.2	0 1 3	0/ 1 4
Division 1.3	0 1 2	0/ 1 3
Division 1.4	0 1 1	0/ 1 2
Division 1.5	0 1 1	0/ 1 1
Division 1.6	0 1 0	0/ 1 1

Desensitized explosives

Flame + Danger	NFPA	HMIS
~~Aerosols 1~~	~~0 4 0~~	~~0/ 4 0~~
~~Flammable Liquids 1~~	~~0 4 0~~	~~0/ 4 0~~
~~Flammable Liquids 2~~	~~0 3 0~~	~~0/ 3 0~~
~~Flammable Solids 1~~	~~0 2 0~~	~~0/ 3 0~~
Self-reactive C	0 1 2	0/ 1 2
Self-reactive D	0 1 2	0/ 1 2
~~Pyrophoric Liquids~~	~~0 4 0~~	~~0/ 4 0~~
~~Pyrophoric Solids~~	~~0 4 0~~	~~0/ 4 0~~
Self-heating 1	0 1 3	0/ 1 2
~~H2O Flam Gas 1~~	~~0 1 0 W~~	~~0/ 1 4~~
~~H2O Flam Gas 2~~	~~0 1 0 W~~	~~0/ 1 3~~
Organic Peroxides C	0 1 2	0/ 1 2
Organic Peroxides D	0 1 2	0/ 1 2

Flame + Warning	NFPA	HMIS
~~Aerosols 2~~	~~0 3 0~~	~~0/ 4 0~~
~~Flammable Liquids 3~~	~~0 2 0~~	~~0/ 2 0~~
~~Flammable Solids 2~~	~~0 2 0~~	~~0/ 2 0~~
Self-reactive E	0 1 1	0/ 1 1
Self-reactive F	0 1 1	0/ 1 1
Self-heating 2	0 1 2	0/ 1 2
~~H2O Flam Gas 3~~	~~0 1 0 W~~	~~0/ 1 2~~
Organic Peroxides E	0 1 1	0/ 1 1
Organic Peroxides F	0 1 1	0/ 1 1

Desensitized explosives 1 & 2

Physical Hazards

- ☐ Explosive
- ☐ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
- ☐ Self-heating
- ☐ Organic peroxide
- ☐ Corrosive to metal
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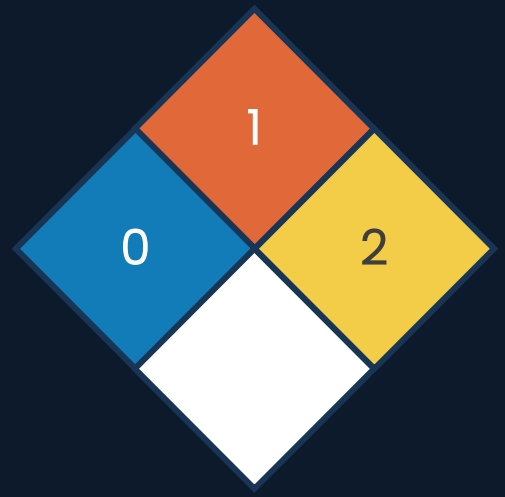

NFPA

HEALTH	/	0
FLAMMABILITY		1
PHYSICAL HAZARD		2

HMIS

Desensitized explosives 3 & 4

Physical Hazards

- ☐ Explosive
- ☐ Flammable (gases, aerosols, liquids, or solids)
- ☐ Oxidizer (liquid, solid, or gas)
- ☐ Self-reactive
- ☐ Pyrophoric (liquid or solid)
- ☐ Pyrophoric Gas
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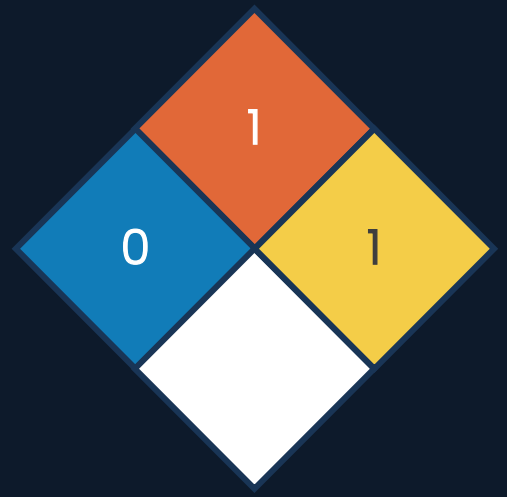


NFPA

HEALTH	/	0
FLAMMABILITY		1
PHYSICAL HAZARD		1

HMIS

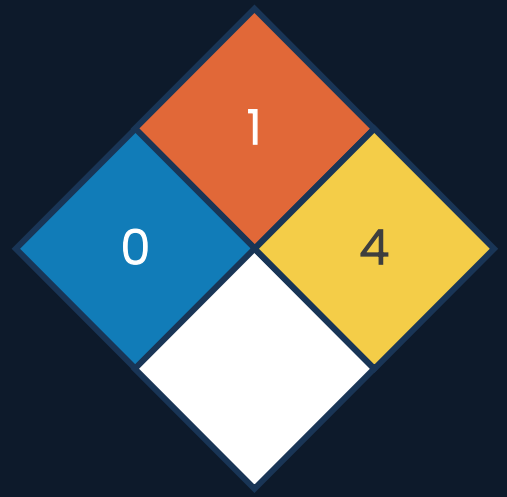
Glad that’s over!

Unstable explosives

Physical Hazards

- [x] Explosive
- [ ] Flammable (gases, aerosols, liquids, or solids)
- [ ] Oxidizer (liquid, solid, or gas)
- [ ] Self-reactive
- [ ] Pyrophoric (liquid or solid)
- [ ] Pyrophoric Gas
- [ ] Self-heating
- [ ] Organic peroxide
- [ ] Corrosive to metal
- [ ] Gas under pressure (compressed gas)
- [ ] In contact with water emits flammable gas
- [ ] Combustible Dust
- [ ] Hazard Not Otherwise Classified

SARA



NFPA

HEALTH	/	0
FLAMMABILITY		1
PHYSICAL HAZARD		4

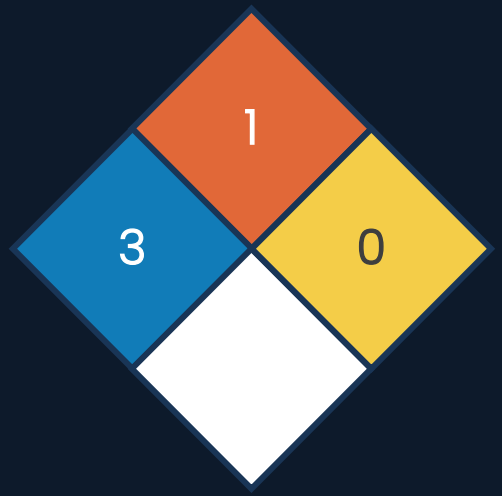
HMIS

Corrosive to the respiratory tract

Health Hazards

- [x] Acute toxicity (any route of exposure)
- [x] Skin corrosion or irritation
- [x] Serious eye damage or eye irritation
- [ ] Respiratory or skin sensitization
- [ ] Germ cell mutagenicity
- [ ] Carcinogenicity
- [ ] Reproductive toxicity
- [x] Specific target organ toxicity(single or repeated exposure)
- [ ] Aspiration hazard
- [ ] Simple Asphyxiant
- [ ] Hazard Not Otherwise Classified

SARA



NFPA

HEALTH	/	3
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS

03 Bridging the gap

Bridging the gap

Decide on a company strategy

- For SARA, work more closely with state/local emergency agencies, they may have guidance on how they would like to handle some of the gaps.

Align your authoring software with your company decisions

- Many authoring solutions provide flexibilities so that authors can implement their interpretation of a grey area, so this may be completely within your control
- Work with your software provider to see if they've established a best practice for this transition, if not, advocate for them to implement one

Cross-train internal stakeholders

- Site EHS may not be aware of these gaps, ensure that they are aware of your strategy to fill them. They may need to adjust their SOPs as well.

04 Q & A

For more information

Visit us at the 3E booth to explore our solutions!

Thank you!

Contact information:

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Empowering safety. Elevating stewardship.
Enabling sustainability.