U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

September 12, 2024

Mr. Kevin Skerrett
UL Solutions
77 Clearbrook Drive
Rochester, NY 14609

Reference No. 22-0136

Dear Mr. Skerrett:

This letter is in response to your October 25, 2022, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the transportation of aqueous solutions of alcohol.

We have paraphrased and answered your questions as follows:

Q1. You ask whether the Pipeline and Hazardous Materials Safety Administration (PHMSA) allows offerors to consider the concentration of "ammonia" or "ammonium hydroxide" in an aqueous solution of alcohol when determining whether the exceptions in § 173.150(e) apply, as opposed to only considering the hazard class of the added ingredient.

A1. The answer is yes. If the ammonia component—in the concentration present in the aqueous solutions of alcohol—does not meet the definition of a "hazardous material" in § 171.8 and does not cause the mixture to meet the definition of an additional hazard class, then the presence of the ammonia component does not preclude the mixture from eligibility for the exception in § 173.150(e).

Q2. You note that "UN2672, Ammonia solution, 8" is listed in § 172.101 Hazardous Materials Table (HMT) with a concentration of greater than 10% but no more than 35% ammonia. You ask whether it is correct to assume that an "ammonia solution" with a concentration of less than 10% ammonia does not meet the definition of a "hazardous material" as specified in § 171.8 when considering the applicability of the § 173.150(e) exception.

A2. The answer is no. The concentration of the ammonia alone does not factor into the consideration for the applicability of the exceptions in § 173.150(e). If an aqueous solution of alcohol containing 1.2% ammonia—for example—was enough for the mixture to meet the definition of an additional hazard class, the mixture would no longer be permitted to utilize the exceptions in § 173.150(e). Similarly, if the concentration of ammonia was within the 10% to 35% range for "UN2672, Ammonia solution, 8", but the mixture still did not meet the definition of Class 8 or any additional hazard class, then the mixture would be permitted to utilize the aqueous solution of alcohol exception in § 173.150(e).

Q3. You ask if the answer to Q2 would be different for a material that does not include the concentration ranges in its proper shipping name.

A3. The answer is no. Any material which causes the mixture to meet the definition of an additional hazard class would not be eligible for the exceptions in § 173.150(e).

Q4. You ask whether the presence, at any concentration, of a material listed in § 172.101 HMT by technical name precludes use of the exceptions in § 173.150(e).

A4. The answer is that it depends on the materials present in the mixture. The presence of a material listed in § 172.101 HMT alone does not necessarily preclude the use of the exceptions in § 173.150(e). However, if the material would cause the mixture to meet the definition of another hazard class, the mixture would not be eligible for the exceptions in § 173.150(e). Also note that some hazardous materials, such as explosives, require a separate evaluation and classification procedure and may be assigned to another hazard class depending on the physical properties of the mixture.

Q5. You ask whether the presence of a hazardous substance, as listed in Appendix A to § 172.101, would preclude the use of the exceptions in § 173.150(e).

A5. The answer is it depends. The presence of a hazardous substance alone would not be enough to preclude the use of the exceptions for aqueous solutions of alcohol in § 173.150(e). However, if a hazardous substance in the mixture exceeds the reportable quantity amount listed in Appendix A to § 172.101 and is in a concentration by weight which equals or exceeds the concentration permitted under the definition for "Hazardous substance" in § 171.8, then the exceptions in § 173.150(e) can no longer be used.

Q6. You note that some hazardous substances with more than one form are listed in Table 1 to Appendix A of § 172.101 ("Ammonia" and "Ammonium hydroxide"). You ask how a shipper determines the most relevant form to apply.

A6. It is the shipper's responsibility to properly class and describe a hazardous material. The shipper must choose the form that best describes the material being shipped.

Q7. You ask whether the presence of a marine pollutant, as listed in Appendix B to § 172.101, would preclude the use of the exceptions in § 173.150(e).

A7. The answer is it depends. The presence of a marine pollutant alone would not preclude the use of the exceptions in § 173.150(e). However, if the mixture contains a marine pollutant in a concentration which equals or exceeds the concentration permitted under the definition for "Marine pollutant" in § 171.8, the use of the exception in § 173.150(e) would not be permitted.

Q8. You ask whether the answer to Q7 depends on whether the material is eligible for the marine pollutant exceptions in § 171.4.

A8. The answer is yes. If the mixture contains a marine pollutant as defined in § 171.8, but is not required to be considered a marine pollutant in accordance with § 171.4(c)(1) or (2), then the mixture may utilize the exception for aqueous solutions of alcohol in § 173.150(e).

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

Eamonn Patrick
Acting Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Wolcott

22-0136

From: INFOCNTR (PHMSA)
To: Dodd, Alice (PHMSA)
Cc: Hazmat Interps
Subject: FW: Questions regarding PHMSA Interpretation 20-0082
Date: Wednesday, December 14, 2022 12:59:58 PM

Hi Alice,

Please see the below interpretation request.

Let us know if you have any questions.

Regards,

-Breanna

From: Skerrett, Kevin <Kevin.Skerrett@ul.com>
Sent: Tuesday, December 13, 2022 11:01 AM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: FW: Questions regarding PHMSA Interpretation 20-0082

After discussion with Breanna at the HMIC on 12/9/2022 at 10:30, I would like to resubmit this as a request for a formal letter of interpretation addressing the questions below.
Please let me know if any additional information is needed.
Thank you very much for your consideration of this request!

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From: Skerrett, Kevin
Sent: Tuesday, November 29, 2022 15:00
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: Questions regarding PHMSA Interpretation 20-0082

I read with great interest the letter of interpretation 20-0082 from PHMSA regarding 173.150(e), and the "Perrigo request for interpretation" referenced in the 20-0082 PDF document.
In this interpretation, a product containing 1.20% of "Ammonia Solution, Strong NF" with CAS# 7664-41-7 was determined to NOT exclude the product from taking the 173.150(e) exception for < 24% alcohol because (bold added):

> *The answer is yes. If the **ammonia solution** component, **in the concentration present in the gel**, does not meet the definition of "hazardous material" in § 171.8, then the presence of the ammonia solution component does not preclude the gel from eligibility for the exception in § 173.150(e).*

At first reading, this appears to be a change from previous interpretations issued on this exception – I would like confirmation as to whether that is true.
The background and wording of the Perrigo request certainly supported such a change but referring to the component as "ammonia solution" made that less certain.
I am looking for informal confirmation with some urgency, as we have a product currently in review that would be impacted by this.
If confirmed, we will be changing our process immediately.

Discussions with PHMSA at the time I submitted the request for interpretation 12-0238 indicated that an ingredient such as an "ammonia solution", if it met the criteria to be a "hazardous material" when added to the product, would result in the product not being eligible for the 173.150(e) exception.
But if the "ammonia solution" ingredient, as added, did NOT meet the criteria to be a "hazardous material" as added to the product, then it's presence would NOT prevent the product from being eligible for the 173.150(e) exception.
Although this is a determination that a manufacturer could easily make, by examining their raw materials and process, this is often impossible to assess for downstream users.
On a Safety Data Sheet, which is most often the only source of composition information downstream, "ammonia solution" would NOT be a component, since it indicates a mixture.
The component would be "ammonia" CAS# 7664-41-7 or "ammonium hydroxide" CAS# 1336-21-6, and any additional water present would be rolled into the "water" component – thus all linkage to the original source of the "ammonia" or "ammonium hydroxide" is lost.
The 20-0082 wording in bold above appears to indicate that PHMSA is now allowing us to consider whether "ammonia" or "ammonium hydroxide" at 1.2% drives the product to a hazard (Class 8) other than Class 3 for the alcohol, as opposed to the ingredient as added.
This appears to address the "materials that meet the defining criteria for hazard classes and divisions in part 173 of this subchapter" part of the Hazardous Material definition at 171.8.

QUESTION #1: Do I correctly describe a change in PHMSA's criteria in the preceding paragraph?

While "ammonia, anhydrous" IS listed in the HMR by its technical name (UN1005), as a gas carrying 2.2 or 2.3, that is not very relevant to an aqueous product.
The lowest concentration "ammonia solution" listing is UN2672, covering >10% to <= 35%.
Since all the "ammonia solution" listings include a concentration range, is it correct to assume that "ammonia solution" does not prevent use of the 173.150(e) exception because the product is <10% ammonia or ammonium hydroxide – so the product does not meet the "materials designated as hazardous in the Hazardous Materials Table" part of the Hazardous Material definition at 171.8, even if the ingredient did?
Would this be different for a component such as "2-(2-Aminoethoxy) ethanol" (UN3055, CAS# 929-06-6), listed in the HMR by technical name, which does NOT include concentration ranges in its listing?

QUESTION #2: Does the mere presence, at any concentration, of a component listed in 172.101 by technical name preclude use of the 173.150(e) exception, or does it depend on whether it meets the description in the table, or whether the product carries the hazard the component is listed for?

"Ammonium hydroxide" is listed in 172.101 Table 1 to Appendix A as a Hazardous Substance with RQ = 1000 lb.
Such a listing requires, in the definition of Hazardous Substance in 171.8, that a solution or mixture be present at >=2% of the listed material.
At 1.2%, the product does not exceed this, even if the ingredient "as added" might have.
But "ammonia" is also listed, with RQ = 100 lb., which requires >= 0.2% in a solution or mixture – which the product DOES exceed.

QUESTION #3: In assessing whether the presence of a "hazardous substance" precludes use of the 173.150(e) exception, presence alone no longer appears to be the criterion. Does it depend on whether the product exceeds the limit in the table at 171.8, or whether the product (as packaged) would exceed the RQ?

QUESTION #4: In the case of a "hazardous substance" with more than one form listed, does it depend on the most relevant form?

"Ammonia, anhydrous" and "ammonia solutions" are listed in 172.101 Appendix B as "Marine Pollutants", with the "solutions" listings mirroring the PSN descriptions in the Hazardous Materials Table.
Since these are not listed as Severe Marine Pollutants, a product containing them does not itself become a Marine Pollutant unless it exceeds 10% per the definition of Marine Pollutant in 171.8.

QUESTION #5: In assessing whether the presence of a "Marine Pollutant" precludes use of the 173.150(e) exception, presence alone no longer appears to be the criterion. Does it depend on whether the product exceeds the Marine Pollutant roll-up calculation in 171.8, or whether the product (as packaged) would need to be considered a Marine Pollutant?

QUESTION #6: Does the answer to QUESTION #5 depend on whether the product (as packaged) is eligible for the Marine Pollutant exceptions at 171.4?

Sorry to be so detailed, but our current process includes all these considerations.
We would like to solidly understand whether the criteria have changed, and how, before we change our review process.
I am hoping that this is a change, since this would make our review process much easier, and easier to understand for our clients and reviewers!

Thank you for considering these issues!

Kevin Skerrett, DGSA
Senior Regulatory Specialist

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