



Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Sixty-third session

Geneva, 27 November-6 December 2023

Item 3 of the provisional agenda

Listing, classification and packing

Classification of UN 1727 AMMONIUM HYDROGENDIFLUORIDE, SOLID

Transmitted by the expert from Sweden*

I. Introduction

1. UN 1727 AMMONIUM HYDROGENDIFLUORIDE, SOLID, also known as ammonium bifluoride, (CAS number 1341-49-7) is a chemical compound used as a sterilizer, in electroplating, and in the ceramic and glass industries. It is also used as a cleaning product, in the treatment of metallic and non-metallic surfaces and as a chemical intermediate in the production of hydrofluoric acid.
2. According to the *Model Regulations*, UN 1727 is a corrosive substance in Class 8, assigned to packing group II without any secondary hazards. However, after an incident during loading, it was revealed that ammonium hydrogendifluoride also seems to meet the criteria for oral toxicity in Division 6.1. For safety reasons, this hazard should then be made visible during transport.
3. In the material safety data sheet (MSDS) linked to the substance involved in the incident, the LD₅₀ value of 130 mg/kg for oral toxicity was stated. This value is also stated under the toxicological information (endpoint summary for acute toxicity) in the European Chemicals Agency (ECHA) registration dossier¹ for ammonium hydrogendifluoride.
4. If the toxicity data would be applied in accordance with 2.6.2.2.4.1 of the *Model Regulations*, this substance would meet the criteria for oral toxicity in packing group III (for packing group III, the limits for oral toxicity are $50 < LD_{50} \leq 300$ mg/kg). Consequently, it seems appropriate to also classify this substance in Division 6.1 in addition to Class 8.
5. Under ANNEX VI Harmonised classification and labelling for certain hazardous substances in the Regulation (EC) No. 1272/2008 on classification, labelling and packaging (CLP)² (derived from the classification system in GHS), ammonium hydrogendifluoride is

* A/77/6 (Sect. 20), table 20.6

¹ <https://echa.europa.eu/nl/registration-dossier/-/registered-dossier/14195>.

² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R1272&qid=1692953836996>.



classified as Skin Corr. 1B (H314) and Acute Tox 3 oral (H301), again indicating its toxic properties. Further information about the substance may be found in the ECHA database³.

6. Also, table A1.18 of annex 1⁴ of the *GHS* indicates that substances that are in Acute toxicity 3 oral (H301) would require a Division 6.1 label during transport. As such, providing yet another signal that UN 1727 has toxic properties that would meet the Division 6.1 criteria according to the *Model Regulations*.

7. When applying the precedence of hazard criteria given in 2.0.3.3 for a substance that meets the criteria for Class 8, PG II and Division 6.1, PG III, it follows that Class 8, PG II should remain as the primary hazard and that Division 6.1 should be assigned as a subsidiary hazard.

8. There are currently only two existing entries for solid substances classified in Class 8 with a Division 6.1 subsidiary hazard. These are UN 1811 and UN 2923, and when comparing their transport conditions with UN 1727, it seems no change in the transport conditions would be necessary for UN 1727 in the *Model Regulations* except for an additional Division 6.1 label. This is also confirmed by the guidelines in the *Guiding Principles*.

II. Proposals

9. Amend in the Dangerous Goods List the entry for UN 1727, as follows (new text in bold and underlined):

UN No.	Name and description	Class or division	Subsidiary hazard	UN packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
								Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
1727	AMMONIUM HYDROGENDIFLUORIDE, SOLID	8	<u>6.1</u>	II	<u>SP</u> <u>XXX</u>	1 kg	E2	P002 IBC08	B2, B4	T3	TP33

10. Since an additional label will be required for UN 1727, it seems reasonable to foresee a transitional period. In line with what was decided for UN 1835 and UN 3423 in special provision 409 due to their changed classification (ST/SG/AC.10/C.3/122/Add.1)⁵, add a new special provision with transitional measures in Chapter 3.3:

“XXX The provisions of Chapter 3.2 from the twenty-third revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations may continue to be applied until [31 December 2028].”

III. Sustainable development goals

11. This document contributes to Sustainable Development Goal 12 “Ensure sustainable consumption and production patterns” and more specifically its target 12.4 “Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.”.

³ <https://echa.europa.eu/sv/information-on-chemicals/cl-inventory-database/-/discli/details/35243>.

⁴ <https://unece.org/sites/default/files/2023-07/GHS%20Rev10e.pdf>.

⁵ ST/SG/AC.10/C.3/122/Add.1.