United Nations ST/SG/AC.10/C.3/2025/19

Secretariat

Distr.: General
9 April 2025

Original: English

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-sixth session
Geneva, 30 June-4 July 2025
Item 3 of the provisional agenda
Listing, classification and packing

Transport of solid hazardous substances with low concentration – New special provision to UN 3077

Transmitted by the United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO)*

I. Introduction

1. Malaria affects millions every year. Insecticide-treated nets (ITNs) are one of the most effective malaria prevention tools, recommended by the World Health Organization (WHO). ITNs provide both chemical and mechanical protection against mosquitoes. Globally more than 200 million[1] ITNs are delivered annually.

2. Often ITNs are individually packed in single-use plastic bags and combined in bales for shipment. The individual packaging is creating an estimated 30,000 tons of plastic waste in communities often lacking adequate waste treatment. Global health partners are therefore committed to reduce plastic waste resulting from ITNs deliveries. This could be achieved by shifting from the use of individual plastic bags to bulk packing of ITNs (i.e., 50 ITNs per bale).

3. ITNs are made of netted materials (polymers, mostly PET and PE) that are factory-treated with insecticide referred to as the active ingredient (AI). A standard ITN weighs about 700-800 g. Two technologies are used for factory-treatment of ITNs: incorporation of the active ingredient(s) into the plastic yarn during the extrusion process prior to the formation of a knitted fabric; or coating the surface of a pre-knitted fabric, or preconstructed netting, with a solution of AI(s) and binder formulants by means of a treatment bath or other application process.

4. Public procurement of ITNs is subject to the WHO Vector Control Products Prequalification programme (WHO PQ). All ITNs that meet WHO prequalification requirements are publicly listed.[2]

* A/79/6 (Sect. 20), Table 20.6.
1 World malaria report 2024.
2 WHO List of VCPs.

5. ITNs are considered continuous, controlled release products. The product is both the formulation and the delivery mechanism. ITNs are designed to release the active ingredient(s) very slowly. The intent is that ITNs remain effective in-service operational use for at least 3 years, or 20 washes.

6. To ensure ITNs meet this requirement they are tested against the Wash Resistance Index (WRI). The WRI test is an analytical procedure that is used to characterize the release of the AI from the polymer/coating under the specific study conditions and methods, and bioassay(s) to investigate the consistency of biological activity of the material's surface. The wash resistance study is intended to measure the rate at which the AI(s) in the reservoir (bound in coating or within the yarn) is depleted through the series of washes by measuring the chemical content. Third-party wash resistance studies are routinely conducted for all ITNs that are prequalified by WHO.

II. Problem statement

7. The AI(s) in ITNs are classified as hazardous substances when shipped separately.

8. The AI(s) are combined with polymers to form the final product. The authors believe ITNs therefore fall under category of UN 3077 Environmentally Hazardous Substances, Solid. N.O.S., Class 9 Miscellaneous dangerous substances and articles, Packing group III.

9. Individually packaged, ITNs fall under Special Provision 375 (SP 375) as the weight of the final product is less than 5kg, therefore exempting them from dangerous goods classifications but necessitating an increased amount of plastic packaging.

10. When combined in bulk packaging of 50 pieces to reduce plastic waste, ITNs no longer fall under SP 375 requiring dangerous goods classification. Dangerous goods classification presents challenges in downstream transport, handling and costs in malaria affected countries.

11. The concentration of AI in ITNs is low (less than 2 per cent). The current definition of SP375 does not adequately consider the low risk of products with a low concentration. It is therefore proposed to introduce a possibility for solids with low concentration of active ingredients to also be exempted in higher weights while maintain the principles of safety, efficiency and environmental preservation.

III. Justification

12. The current designation of UN 3077 for solids and UN 3082 for liquids allows for a range of products to fall under this category, with greatly different concentrations of hazardous substances and therefore different risk profiles.

13. SP 375 for solids under UN 3077 or liquids under UN 3082 up to 5 kg or 5 litre provides relief for small-scale packaging, however, is not proportionally connected to the level of risk. For example, a different product classified under UN 3077, weighing 5 kg and individually packaged, but containing up to 1 kg (20 per cent concentration) of hazardous substance can be exempted from UN 3077 based on SP 375. In the case of ITNs, the same amount of hazardous substance spread over 50 kg of solids cannot apply the same exemption, despite the same total amount of hazardous substance (AI).

14. In the above example, the worst-case scenario – full release of the hazardous substance (for ITNs the Active Ingredient) – results in the same amount of total hazardous substance in the environment. However, when incorporated in low concentrations and in a product specifically designed to preserve the active ingredient in the polymer structure, like ITN, the actual level of hazardous material release may be lower and will be localised.

IV. Proposal

15. Considering the above, the following possible options are proposed for the Sub-Committee's consideration.

Option 1

16. Create a new special provision for solids under UN 3077 for solids with low concertation of active ingredients of less than 2 per cent.

17. Amend the Dangerous Goods List in chapter 3.2 as follows (new text is underlined):

UN No.	Name and description	Class or division	Subsi-diary hazard	UN packing group	Special provi-sions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
								Packing instruction	Special packing provisions	Instruc-tions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	9		III	274 331 335 375 XXX	5 kg	E1	P002 IBC08 LP02	PP12 B3	T1 BK2 BK3	TP33

18. Amend chapter 3.3 by introducing the following new special provision XXX:

"SPXXX These substances, when containing a concentration of hazardous substances of less than 2 %, transported in single or combination packagings containing a net quantity per single or inner packaging of 50 l or less for liquids or having a net mass per single or inner packaging of 50 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.".

19. The Sub-Committee may also consider limiting the application of this proposed Special Provision to ITNs only:

"SPXXX Specifically for Insecticide Treat Nets used for malaria prevention, when containing a concentration of hazardous substances of less than 2 %, transported in single or combination packagings containing a net quantity per single or inner packaging of 50 l or less for liquids or having a net mass per single or inner packaging of 50 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.".

Option 2

20. Amend SP375 as follows (new text is underlined):

"375 These substances when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Specifically for Insecticide Treated Nets used for malaria prevention, when containing a concentration of hazardous substances of less than 2 %, the net mass per single or inner packaging of 50 kg or less are not subject to any other provisions of these Regulations provided the packagings meet the general provisions listed above".

V. Sustainable Development Goals impact

21. This proposal directly contributes to the Sustainable Development Goal 12: *Ensure sustainable consumption and production patterns* by promoting sustainable practices; and, indirectly, to Sustainable Development Goal 13: *Climate action* by reducing plastic waste, which contributes to environmental preservation and mitigates the impact of hazardous substances.

22. It also supports Sustainable Development Goal 3: *Ensure healthy lives and promote well-being for all at all ages* by contributing to the efficient distribution of ITNs, supporting the achievement of universal health coverage, and enhancing the impact of malaria prevention programs.