

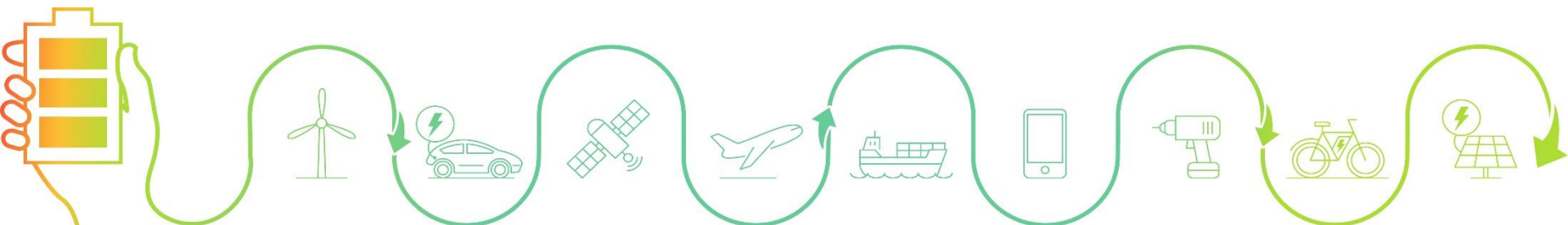


ADVANCED RECHARGEABLE & LITHIUM BATTERIES ASSOCIATION

UN IWG “batteries classification”

May 15, 2026

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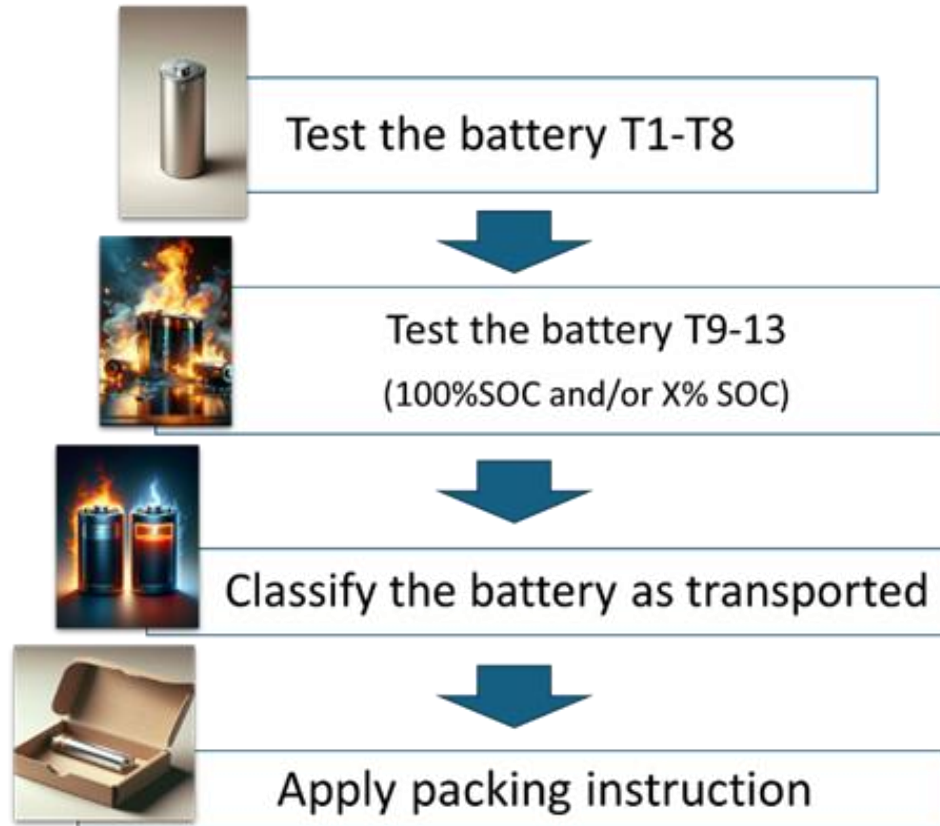
Summary of key rationale :



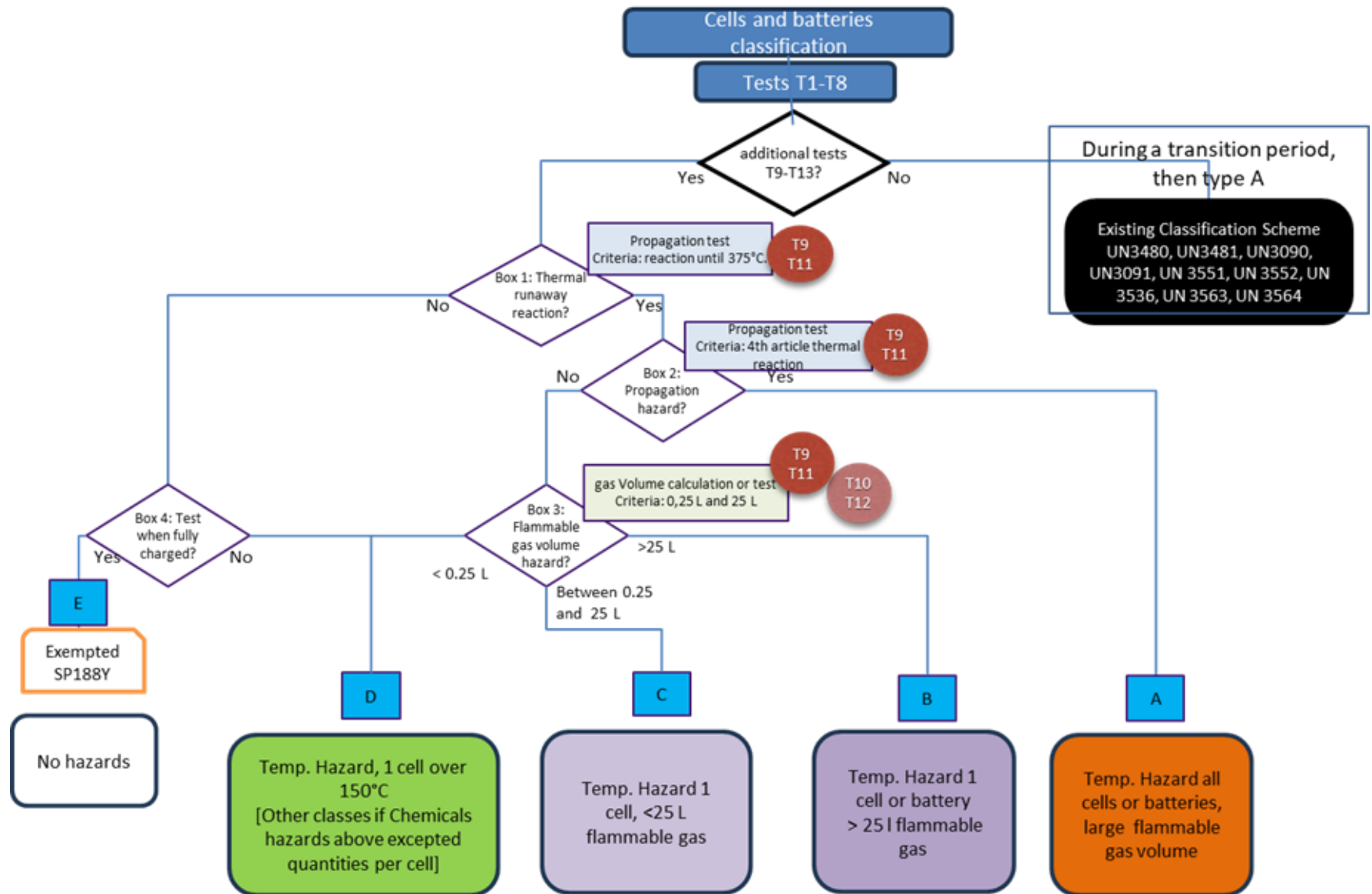
- A- General approach of the new hazard based classification
- B- Rationale for the product categories.
- C- Classification of the new cells, batteries and batteries in equipment as independent objects
- D- Packaging requirements and granularity of the transport conditions
- E- Identification and communication of the hazards



A- General approach of the new hazard based classification



B- Rationale for the product categories.



C- Classification of the new cells, batteries and batteries in equipment as independent objects

Classification based Hazard based approach:

- 4 hazard types
- 3 levels of risk.

- 1: Very low risk.

The cells and batteries may be new or used, at reduced or full SOC, or in equipment, but still compliant with the tested type and SOC requirement. In this case the risk of TR during transport is very limited as long as the batteries are correctly protected and the package is compliant to the TR prevention requirement as applicable.

-2: Medium risk.

This case includes new product not tested (assigned to type A by default), D&D not liable to react during transport, products recalls and others. The level of confidence on the product robustness is reduced, but no direct safety risk during transport is identifiable. Similarly to the existing regulation (SP376) , the assessment of the risk during transport will be under the responsibility of the shipper, for each individual case of transport. In this case the package is expected to contribute in the prevention of the TR propagation risk

- 3: High risk.

This case includes D&D product liable to react during transport, and also waste batteries, because the transport conditions are not expected to correctly protect the batteries from damage. In this case, the packaging requirement include the containment properties.

The responsibility of the product risk assessment is on the shipper, and based on the method applied today in SP376, as explained in the new SP310X.

Packaging protection.

Protection and TR
Prop. Prevention.

Protection and TR
containment.

D New Classification and packaging conditions

3 risk levels, 4 hazard types.

Very low event risk

(i.e. new batteries, tested type)

Medium event risk

(i.e. prototypes, recall, protected waste, D&D..)

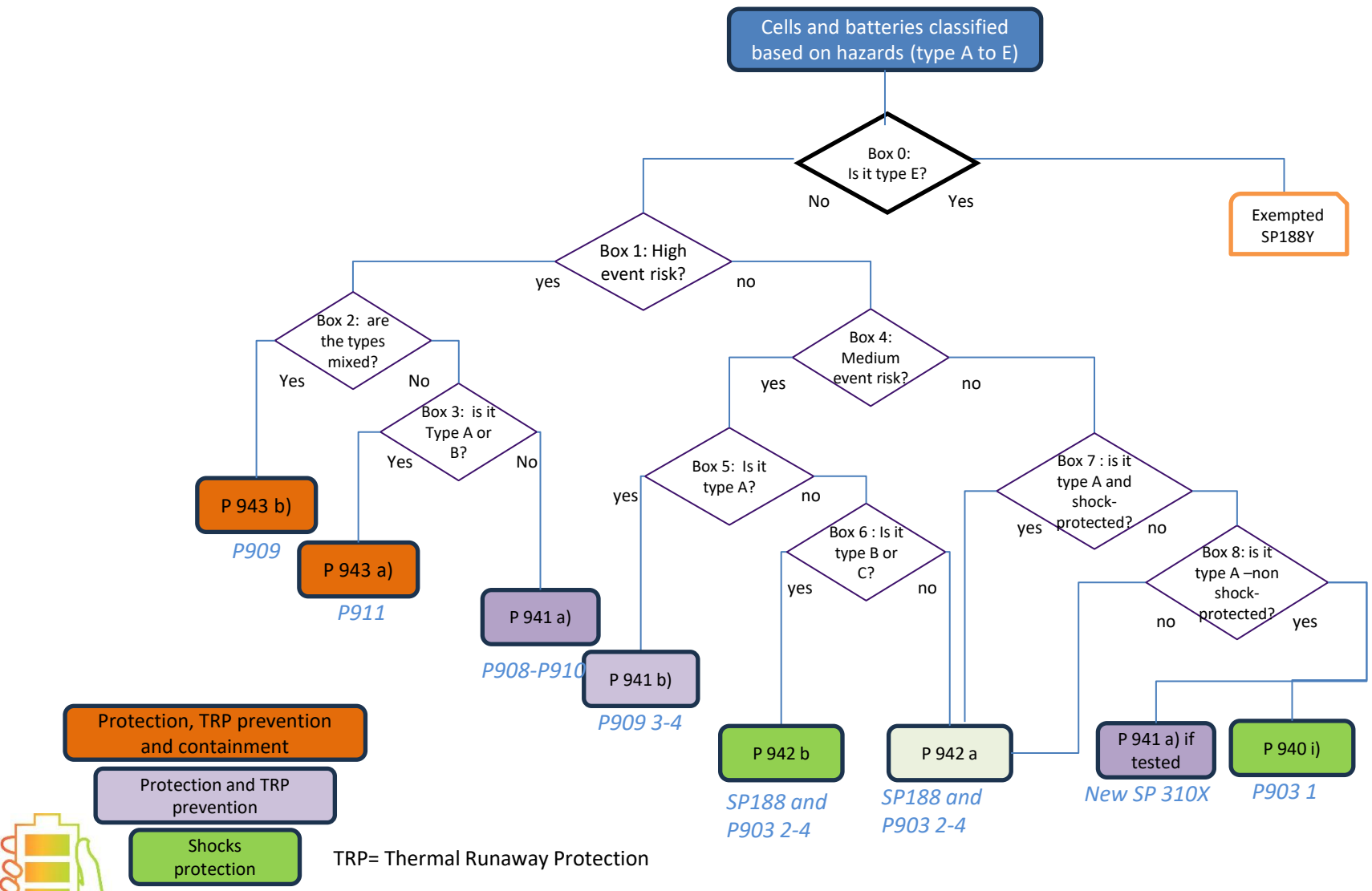
High event risk: (i.e. non protected and mixed waste, D&D liable to react,..)

	Type A (Fire propagation)	Type B (Large flame risk)	Type C (Small flame risk)	Type D (No flame risk)
Very low event risk	Packaging protect. UN G.II, or equipment/casing protection > 12 kg	Packaging protection, non UN G.II	Packaging protect., non UN G.II	Packaging protect., non UN G.II
Medium event risk	TRP prevention by packaging or eqpt.			
High event risk	Packaging non combustible, UN G.II, TR Prop.Prevention Batt to batt	Packaging non combustible, UN G.II	Packaging non combustible, UN G.II	Packaging protect., non UN G.II
	P UN G.I, Non Combustible, heat containment/ prevention package to package	P G.I Non Combustible, heat containment/ prevention package to package	Packaging non combustible, UN G.II	Packaging non combustible, UN G.II

D -Packaging decision tree



Based on 5 tested types A to E



D. New Classification and packaging conditions

Level	Packing requirements	Probability of event	Products hazards	Products examples (non exhaustive)	New Packaging and description summary (exhaustive)	Proposal ID	
0	Only identification	Very low	Type E	New, or some solid state, or some sodium-ion,	None (<i>SP188 type</i>)	PSN	
1	protection, no mitigation	Very low	Type B,C,D	New, Small batteries or low SOC or in equipment	[P942 ?]: Non UN (<i>SP188 or P903- type, P907</i>)	Mark	
			Type A	New, with strong casing	P940-ii):Non-UN (<i>P903 (2-4))</i>	Label	
				New, others (no strong casing, non small)	P940-i):UN GII (<i>P903 (1)</i>)	Label	
2	protection and TRP prevention	Very low	Type A	New, Below 12 kg batteries	P941-a)UN GII prevention propagation batt. to battery (<i>see P910</i>)	Mark	NEW
			Type D	New product Non tested, Prototypes, D&D non liable to react, product recalls ,...	[P942]Non-UN (<i>SP188</i>)	Mark	NEW
		medium	Type B,C		Non combustible, GII	Label/mark?	
			Type A		P941-b) Non combustible, prevention propag. Batt. to batt., GII (<i>P908-P910</i>)	Label	
			Type A,B	Waste batt. more than 12 kg with strong casing, or in equipment	P941-b) Non UN , Non combustible, prevent propag. Batt. to batt (<i>P909 (3-4))</i>	Label	
3	Protection, TRP prevention and containment	high	Type C,D	D&D liable to react (non mixed products, including waste)	P 941-a) Non Combustible, heat containment(?) GII (<i>P909 based</i>)	Mark	
			Type A,B,	D&D liable to react (pre-waste transport)	P943-a)GI, Non combustible, prevention propag. of heat outside (<i>P911</i>)	Label	
			Mixtures	Waste transport	P-943-b)GII, Non combustible, prevent propag. Package to package (<i>P909</i>)	Label	

E-Identification and communication of the hazards



Multiple proposals: 2 types, 4 types , 6 types, or more .

To be further discussed (example 4 or 6 below)

- UN 3600, BATTERY, LITHIUM ION TYPE A or BATTERY, SODIUM ION TYPE A
- UN 3601, BATTERY, LITHIUM METAL TYPE A
- UN 3602, BATTERY, LITHIUM ION TYPE [*] or BATTERY, SODIUM ION TYPE [*] or BATTERIES CONTAINED IN EQUIPMENT TYPE [*]
- UN 3603, BATTERY LITHIUM METAL TYPE [*] or BATTERIES LITHIUM METAL CONTAINED IN EQUIPMENT TYPE [*]

[UN 3604, BATTERY, LITHIUM ION TYPE A, CONTAINED IN EQUIPMENT or BATTERY, SODIUM ION TYPE A, CONTAINED IN EQUIPMENT,

UN 3605, BATTERY LITHIUM METAL TYPE A, CONTAINED IN EQUIPMENT]

With consequential change:

3.1.2.9 Lithium and Sodium ion batteries , add the text:

The “[*]” shown in Column 2 of the Dangerous Goods List shall be replaced by the appropriate hazard type classification as shown in 2.9.6.2 (i.e., “B”, “C”, or “D”) with no brackets or parentheses



Hazard based regulation: implementation consequences

1- The shipper is responsible for the battery safety information gathering (or absence of):

- The battery hazard (by default type A)
- The battery State of Charge (by default SoC=100%)
- The battery risk status (by default = Medium if not damaged , High if damaged or waste).

2- The Regulation provides the shipment conditions for each case of battery hazard at specific SOC and specific risk status: based on the Special provisions, and/or the packaging decision tree.

A new battery with no information on compliance to the tested type (tests T1 to T8), the SOC and the hazard (tests T9 to T13) can be transported in packaging P 941 b).

3- The regulation clarifies the requirements for the communication and justification of the safety information used by the shipper to select the transport condition. By default, the compliance to UN regulation and Packaging Group II is applicable.



Implementation benefits?

For authorities:

The benefit of the classification and the information communication is the better confidence in the real level of safety of the transported batteries, and the usage of a suitable protection level.

For industry

The cost/benefit analysis is at multiple levels:

The benefit of the assessment and communication of the hazard includes

- at direct shipment cost level: potential access to exemptions of TDG default rules, packaging costs related the real risk in transport
- at logistic level: better access to transport , better insurance conditions, etc...

The cost includes:

- the additional tests, but these are optionals, and realized only if a benefit is attached to them.
- The complexity of the additional conditions. The regulation formatting should take this into account:
 - SP310X is describing all the categories of batteries that can be transported under a described Packaging instruction. This SP can be used as a decision support for the transport of any battery, except special cases where a decision from authorities is required: clarify the list of cases described ? I a decision tree needed?
 - Clarify the communication and justification requirements.

