PCB PLATFORM

Packaging and Transportation of PCB equipment and wastes

unitar
United Nations Institute for Training and Research

Provide guidance for packaging and safe transport of PCB stocks (equipment and wastes).

PCB PLATFORM

unitar United Nations Institute for Training and Research

Packaging and Transportation

PCB Stocks

Packaging

Interim Storage

Transportation within facilities or the country

Storage

National & International transportation

PCB PLATFORM

unitar
United Nations Institute for Training and Research

Safe packaging:

- To avoid any environmental accident
- To avoid cross-contamination

Prior to transportation:

- Clear the area
- Plan packaging activities carefully with all personnel involved
- To avoid any spills that could contaminate the area (soil/ water)

Packaging of oils/dielectric fluids:

- Separate oils/fluids from the equipment if possible
- Collect in UN certified drums*
- Ensure good and safe packaging

*REF:
https://open.unido.org/api/documents/4695035/download/Guidelines%20for%20PCBs%20and%20PCB%E2%80%93containing%20equipment%20packaging,%20and%20transportation

Packaging Transformer:

- All liquids should be drained from the transformer
- It should be placed onto a tray and inside a container
- Have sufficiently fixed anchor points to prevent it from overturning
- For long-distance transport, use insulating materials to secure e.g. plie wood

Packaging Capacitors:

- Capacitors must always stand upright
- Leaking devices should be sealed
- Place them inside a container with protections against leaking

PCB PLATFORM

unitar United Nations Institute for Training and Research

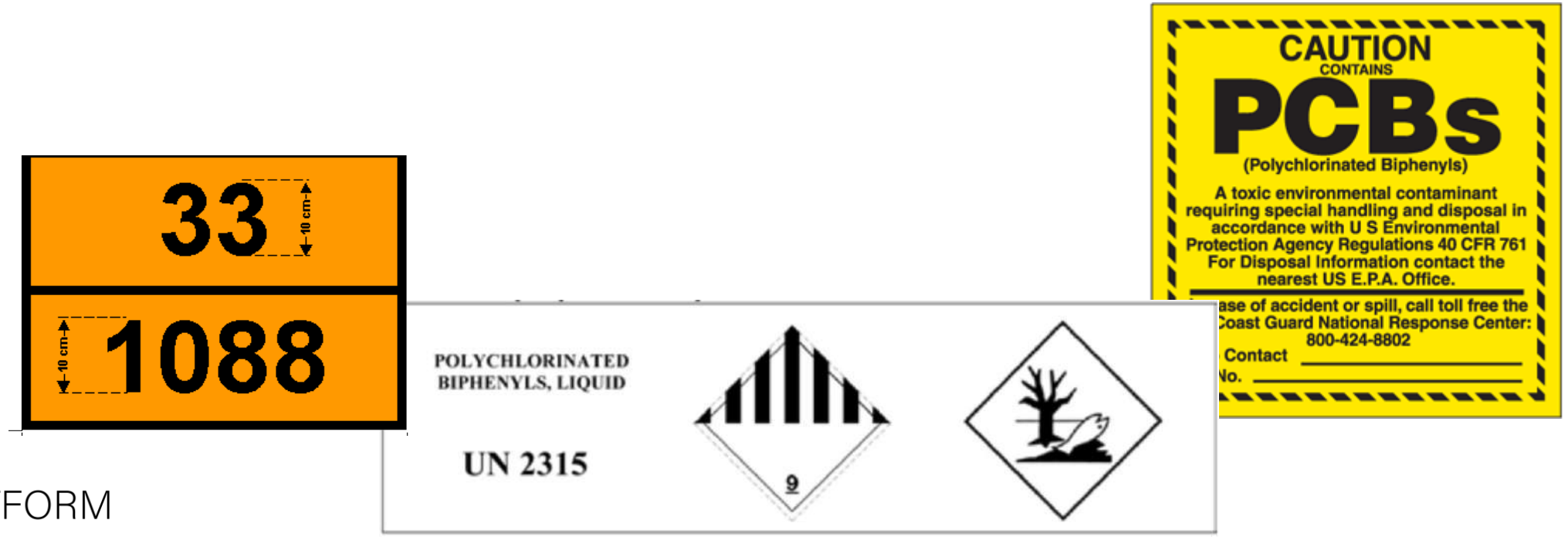
Packaging other wastes:

- Such as contaminated soil, concrete, mixed solid-liquid wastes etc.
- Should be packaged in metallic bines
- Wastes containing small amount of PCB may be collected in robust plastic bags and packaged in metallic bins

Labelling:

- Each equipment
- Each container

with PCB must be labeled unequivocally, so they may easily be identified.

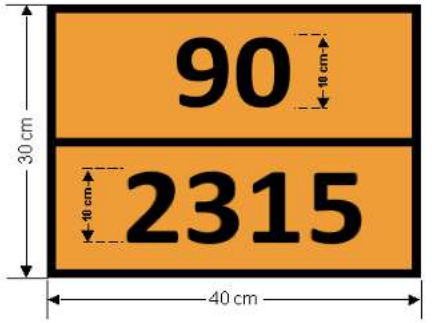


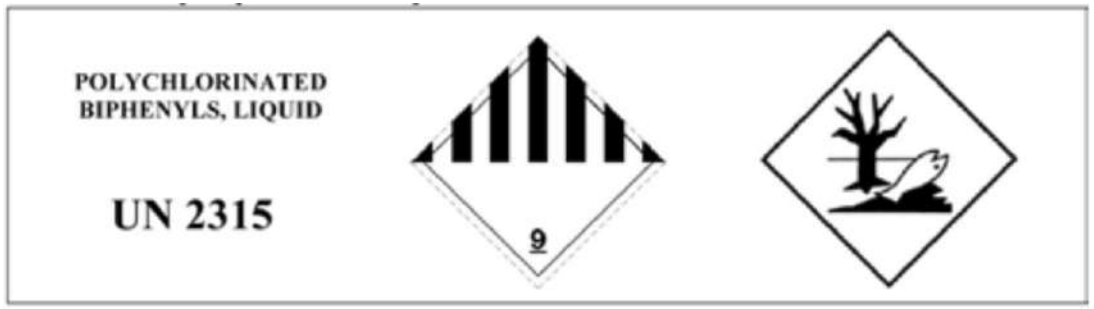
PCB PLATFORM

unitar
United Nations Institute for Training and Research

Labelling equipment:

- Safety data sheet
- PCB sign
- UN label or/and the Kempler nomenclature



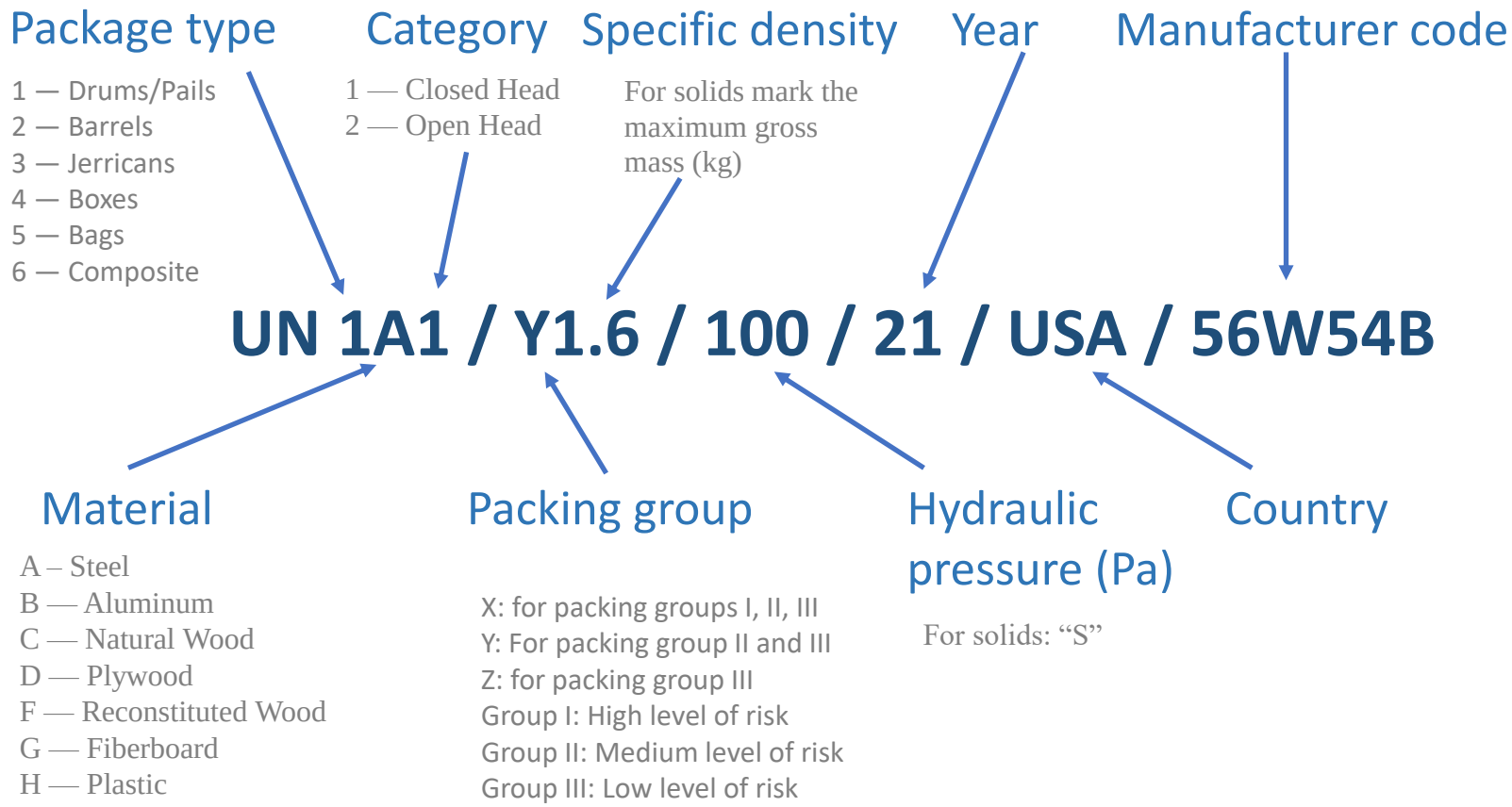


PCB PLATFORM

unitar United Nations Institute for Training and Research

Labelling Containers:

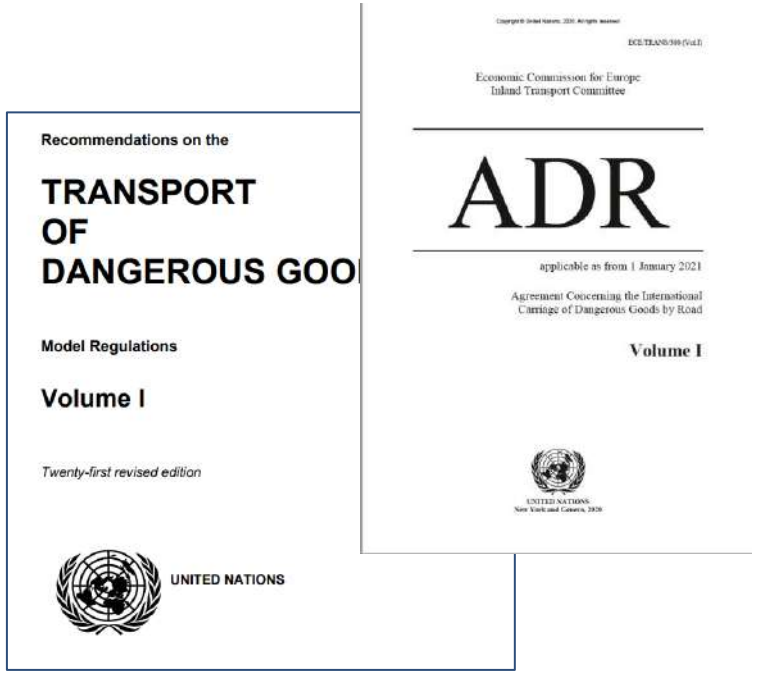
- **UN certified packing system code for PCB (for liquids or solid)**



https://wedocs.unep.org/bitstream/handle/20.500.11822/31228/PCBMg.pdf?sequence=1&isAllowed=y

Labelling Containers:

- UN regulation on Transport of Dangerous Goods*
- Kepmpler code/ ADR hazard identification numbers (HIN)**



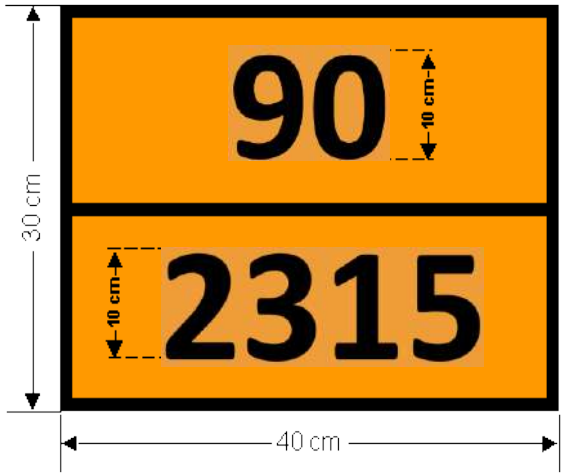
*REF: https://unece.org/info/Transport/Dangerous-Goods/pub/2589

**REF: https://unece.org/sites/default/files/2021-01/ADR2021_Vol1e_0.pdf

PCB PLATFORM

unitar United Nations Institute for Training and Research

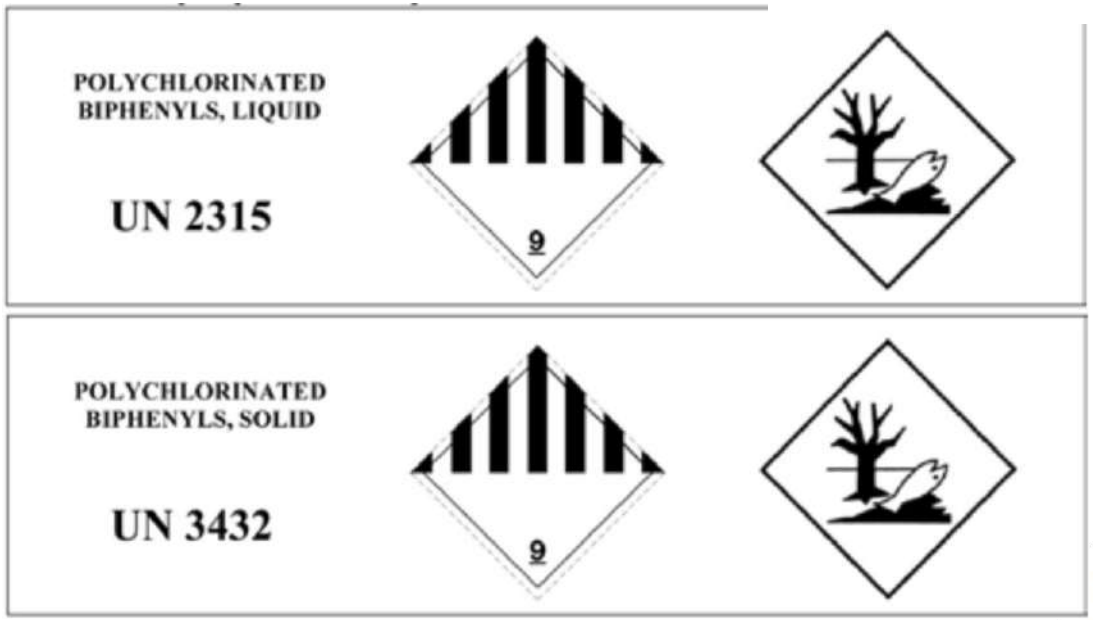
Kempler Code: ADR hazard identification numbers (HIN)*



Hazard identification number
(2 or 3 digits)

Identification number of the material.
(4 digits)

- Identification number of the risk for PCB is Class 9 (dangerous materials) and 0 (impact the environment)
- Identification number for PCB liquids: 2315
- Identification number for PCB solids: 3432



*REF: https://www.safetyadr.com/?p=1173

- Interim storage is needed to store PCB stocks until transportation either to the long-time storage facility, treatment, or incineration plant.
- The interim storage facilities need to comply with the minimum safety requirements for the storage of PCBs.
- More information on these requirements is provided in our module about PCB storage.

Packaging and Transportation

5. Transportation within the facilities

- Transportation inside facilities is without using the public roads.
- If the equipment is losing fluid, it must be placed on pans or trays with the capacity to contain at least 110% of the total liquid. Use one tray per container.
- The fluid spilled must be collected and placed in drums or containers with airtight seals as soon as possible.
- The personnel should be supervised by a professional, must have a clear understanding of the risks associated with the packaging and movement of PCB stocks
- Be prepared for emergencies.
- Use only appropriate machines like manual, electric or engines forklifts trucks.

PCB PLATFORM

Transportation off site

- National transportation, which is usually ground transportation.

- International transportation, which is usually over-sea transportation.

National transportation

- We must comply with national regulations on the transport of hazardous materials and wastes.
- The transportation truck must be in good condition, carry in the kits in case of accidents, oil spills, or other contingency events.
- The accommodation of the equipment inside the truck must be safe and fix avoiding any movements during the trip.
- The route of the trip should be pre-planned and verified to avoid problems with bridges, curves, or other narrow routes.

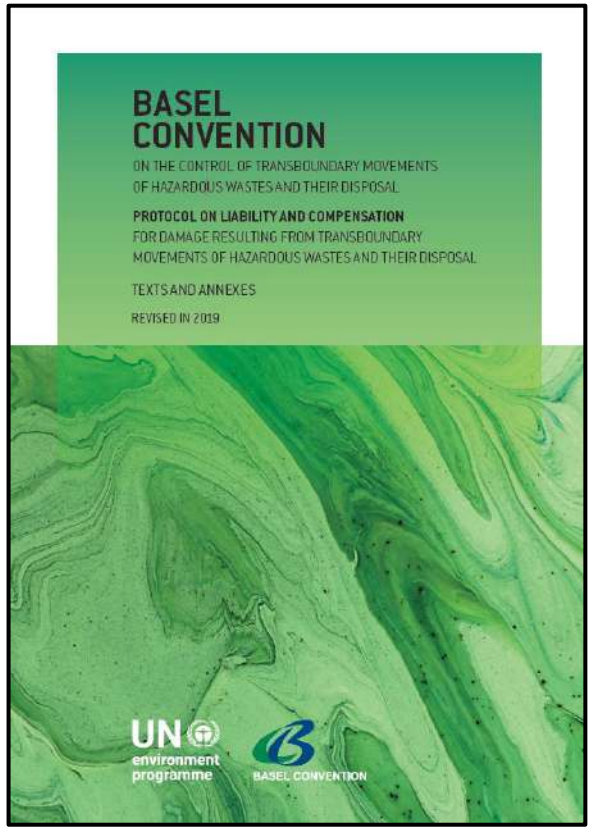
5. National Transportation

PCB PLATFORM

unitar
United Nations Institute for Training and Research

5. National Transportation

PCB PLATFORM



http://www.basel.int

International transportation

Any export operations of PCB wastes must consider the following aspects:

- The transportation operations must follow the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (valid for all parties).
- PCB wastes may only be exported to countries that have the technology to eliminate PCB.

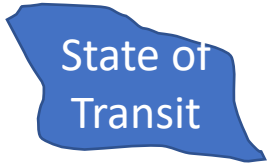
PCB PLATFORM

Basel Convention

The convention sets out the so called Prior Informed Consent procedure between the export and the import country (Article 6):

State of import to notifier:
- consenting with or without conditions
- denying permission
- requesting additional information

State of export needs in writing:
- consent of the State of import
- contract between the exporter and disposer specifying environmentally sound management of the wastes (Article 6.3)

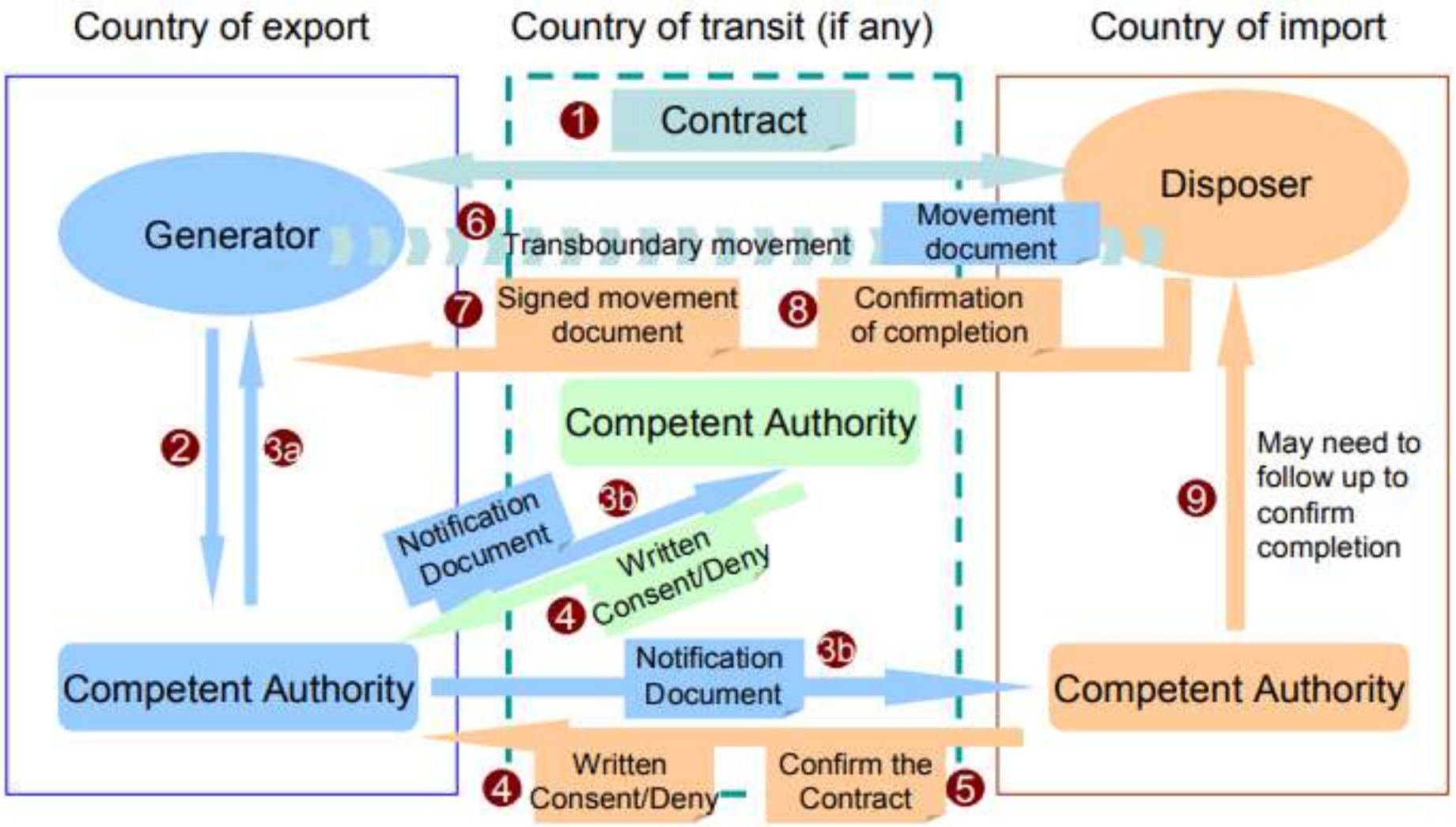


State of transit (which is a Party) to state of export:
- within 60 days of notification
- consenting with or without conditions
- denying permission
- requesting additional information

A state of transit may not to require prior written consent.

PCB PLATFORM

unitar
United Nations Institute for Training and Research



Source:
https://wedocs.unep.org/bitstream/handle/20.500.11822/9764/-Enforcement_Handbook_on_Controlling_Illegal_Shipments_of_Chemicals_and_Waste_-_For_Asia_Enforcement_Officers-2015Enforcement-handbook-controlling-ill.pdf?sequence=3&amp%3BisAllowed=
The numbers and the direction of arrows indicate the sequences of the appropriate steps to be followed, please visit:
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/leaflets/leaflet-control-procedures-en.pdf

General aspects to be followed for international transportation:

- The transportation truck must be in good condition, carry in the kits in case of accidents, oil spills, or other contingency events.
- The accommodation of the equipment inside the truck must be safe and fix avoiding any movements during the trip.
- The route of the trip should be pre-planned and verified to avoid problems with bridges, curves, or other narrow routes.

PCB PLATFORM

PCB PLATFORM

Thank you for your attention !

https://www.pcb.unitar.org/

unitar
United Nations Institute for Training and Research