

BEST PRACTICE TO TRANSPORT

Purpose:

Maersk is committed to ensuring the overall safety of maritime transportation. Therefore, we have created this easy reference document as a step-by-step guide to book certain commodities, which is intended to support the safety of our crew at sea and shoreside, as well as safety of cargo, environment, vessels, and facilities.

Commodity:

VEHICLES – non battery powered

For E-vehicles please refer to “E-VEHICLES (vehicles - battery powered)”

Description:

The IMDG (International Maritime Dangerous Goods) Code covers a wide range of terms and phrases related to “vehicles.” Conventional vehicles use gasoline (petrol) or diesel-powered engines. There are also hybrid vehicles that use a combination of a combustion engine and battery powered by electricity, these are different compared with an electric vehicle (EV) that is only powered by electricity. Vehicles are self-propelled apparatus designed to carry one or more persons or goods. Dangerous goods such as batteries, air bags, fire extinguishers or other integral components of the vehicle necessary for its operation are not subject to IMDG requirements.

Synonyms:

Cars, Motorbikes, Airplanes, Forklifts, Boats etc.

Type of Container:

Acceptable in all kinds of container types

Used vehicles are prohibited in active REEFER and non-operated REEFER containers

Risk:

Vehicles that have either a connected battery or fuel tank containing flammable liquid (petrol or diesel) or flammable gas such as propane, which can cause sparks and fire.

Maersk.com Commodity Description:

New Vehicles, cars, buses, trucks, lorries, motorcycles, bicycles

Used Vehicles, cars, buses, trucks, lorries, motorcycles, bicycles

Aircraft, spacecraft, and parts thereof

Ships, boats, and floating structures

Circumstances under which we accept this commodity:

UN3166/9 in accordance with IMDG code SP962

Non-dangerous goods in accordance with IMDG code SP961

- Hybrid vehicles with lithium batteries shall be declared as dangerous goods under UN3166/9. No special provision or exemption allowed.
- All other Vehicles/Hybrids can be accepted as non-dangerous goods if the vehicles comply with IMDG code SP961, and do not utilize Lithium Batteries as the electrical source (example Nickel Metal Hydride or Dry Cell batteries)

New undamaged vehicles

- Battery must be protected from short-circuit.
- Fuel tank must be drained
- No leakages
- Key must be taken off the starter

Used undamaged vehicles

- Battery must be disconnected. Battery cable connection must be insulated with special battery isolating tape



- Fuel tank must be drained
- No leakages
- Key must be taken off the starter

Damaged vehicles (end of life / total loss)

- Battery must be removed and not placed in the vehicles or container
- Fuel tank must be drained
- No leakages
- Key must be taken off the starter

Packing & Stuffing Remarks:

- Acceptable as unpacked, but vehicles must be lashed and secured to avoid the vehicle can move

Circumstances under which we **DO NOT accept this commodity:**

Damage vehicles with battery installed

Required documentation when shipped as Dangerous Goods:

- Dangerous Goods Declaration (DGD)
- Container Packing Certificate (CPC)

How to Book Dangerous Cargo with Maersk:

- Main Website: <https://www.maersk.com/support/faqs/how-to-book-dangerous-cargo>
- EDI (Electronic Data Interface)

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Best Practice for Stowing and Securing Vehicles in Containers

The typical containerized stowage of vehicles for ocean transport is two vehicles in a 20' and four vehicles in a 40' container. There are numerous patented racking systems on the market to aid in the safe storage and securing of vehicles packed into containers.



Fig 1. Patented racking system stowing four vehicles in a 40' container.

Other suitable non-patented for the stowage of vehicles in containers are commonly used. One such method involves the construction of lumber cradles that support the upper tier vehicles.

Step 1.

Lumber cradles are constructed, positioned within the container so that the axels of the upper tier vehicles will rest on them. The lumber cradles must be constructed of suitably sized lumber, (i.e. 4" x 4") and must be sturdy with supporting verticals wedged in the valleys of the container sides.



Fig 2. Lumber cradle construction to support the axel of an upper tier vehicle.

Step 2. Load the 1st vehicle utilizing a fork forklift equipped with extra-long blades to suspend the vehicle by chains or slings of appropriate strength from the upper lashing rings of the container. The front and rear axles of the suspended vehicles must sit soundly on the cross beams of the lumber cradles; however the cradles should not take all the weight. Note: Two (2) chains shall be utilized on each wheel to separate lashing rings if the weight of the vehicle exceeds 3750 lbs.



Fig 3. Suspending vehicle from upper rings



Fig. 4 Suspended vehicle sitting on cradles

Step 3. Secure the vehicles to the cradle by lashing straps and blocking nailed to the cradle to prevent the suspended vehicle from swaying.

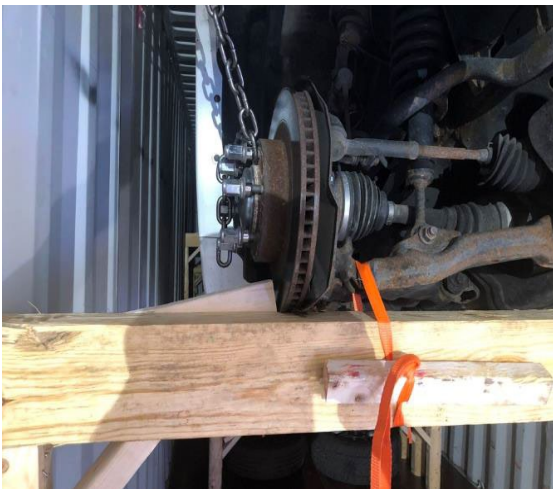


Fig 5 and 6. Axel lashed and blocked to cradle to prevent swaying

Step 4. Stow the second vehicle under the first. Secure as per Step 7.



Fig 7. Second vehicle stowed under the first.

Step 5. Stow the third vehicle (upper tier), following the same procedure described in Step 2 and



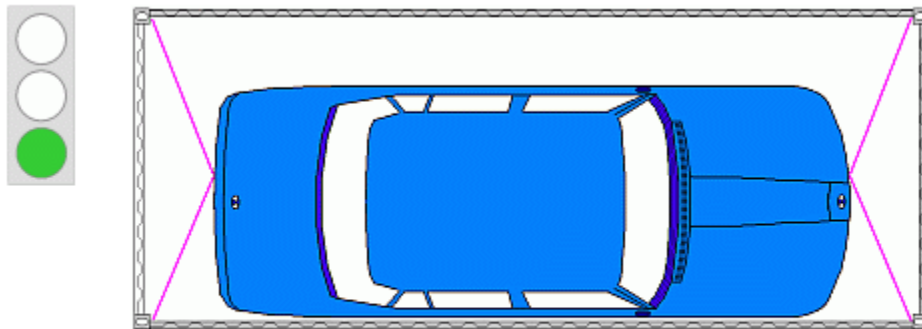
Fig 8. Third vehicle

Step 6. Stow the fourth vehicle under the third.



Step 7. Secure the vehicles stowed on the container floor. In all securing situations, the recommendations and guidance of the CTU (Cargo Transport Units) Code, Annex 7 should be consulted at the following link: <https://wiki.unece.org/display/TransportSustainableCTUCode/Annex+7.%09Packing+and+securing+cargo+into+CTUs>

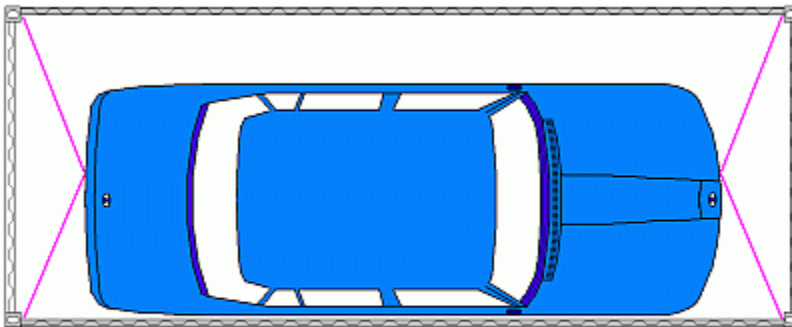
Vehicles must be lashed directly from the strong points of the chassis to the lower lashing rings along the sides of the container. Although commonplace, blocking by wedges or lumber nailed against the tires of the vehicles should only be done as an added measure. Wooden floors of closed CTUs are generally not suitable for nailing and nailing to the floor may only be acceptable with the consent of the CTU operator.



Lashed automobile in a 20' box container
- plan view



More favorable lashing arrangement from two lashing points



**Lashed automobile in a 20' box container
- plan view**