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February 19, 2026
Mitsui Chemicals, Inc.

The Physical Internet Realization Council's Chemicals Working Group has initiated the development of guidelines to promote palletization

The Chemicals Working Group (Chairman: Professor YANO Yuji, Ryutsu Keizai University) of the Physical Internet Realization Council, which is led by the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), has commenced the development of guidelines aimed at promoting palletization※ within the chemical industry as part of broader efforts to address pressing logistics challenges, including the acute shortage of truck drivers.

※"Palletization" refers to a logistics method in which goods are placed on pallets and subsequently handled, transported, and stored as unified units using equipment such as forklifts.

The Chemicals Working Group currently includes 83 members (82 companies and 1 university), most of them consignors and logistics providers, and sees participation from the Japan Chemical Industry Association, the Japan Petrochemical Industry Association, and several relevant divisions from METI and MLIT, among other bodies. Mitsui Chemicals, Inc., Mitsubishi Chemical Corporation, Tosoh Corporation and Toray Industries, Inc. serve as the Group's joint secretariat.

For further information, please see the following materials.

■ References

- July 29, 2025: Industry Group Launches Collaborative Logistics Demonstration Test Using Rail Transport in Tokai and Chugoku Regions in Effort to Solve Logistics Issues in Chemical Industry
  https://jp.mitsuichemicals.com/content/dam/mitsuichemicals/sites/mci/documents/release/2025/250729e.pdf
- June 25, 2025: Physical Internet Realization Council's Chemicals Working Group Reported the FY 2025 Action Policy
  https://jp.mitsuichemicals.com/content/dam/mitsuichemicals/sites/mci/documents/release/2025/250625e.pdf
- December 23, 2024: Physical Internet Realization Council's Chemicals Working Group Runs Demonstration Test to Find Effects of Collaborative Logistics
  https://jp.mitsuichemicals.com/content/dam/mitsuichemicals/sites/mci/documents/release/2024/241223_1e.pdf
- June 11, 2024: "Physical Internet Realization Council's Chemicals Working Group to Conduct Demonstration Test for Collaborative Logistics in the Kanto–Tokai Region"
  https://jp.mitsuichemicals.com/content/dam/mitsuichemicals/sites/mci/documents/release/2024/240611.pdf (Japanese only)
- June 13, 2023: "Establishment of a Chemicals Working Group in the Physical Internet Realization Council"
  https://jp.mitsuichemicals.com/content/dam/mitsuichemicals/sites/mci/documents/release/2023/230613e.pdf

February 19, 2026
Physical Internet Realization Council
Chemicals Working Group

Physical Internet Realization Council's Chemicals Working Group Begins Formulating Palletization Promotion Guidelines to Solve Chemical Industry Logistics Challenges

The Chemicals Working Group[*1] (WG) of the Physical Internet Realization Council[*2] led by the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has started drawing up guidelines to encourage palletization in the chemical industry.

Amid an increasingly serious shortage of truck drivers, reducing drivers' cargo waiting time for loading/unloading at logistics sites has become an urgent issue. Palletization is attracting attention as one effective measure being pursued to address these issues.

In light of this social situation, the Chemicals WG is putting its weight behind efforts to further popularize integrated palletization, particularly by developing associated guidelines. Specifically, these guidelines will address the various challenges faced at logistics sites, such as switching from manual cargo handling to palletization, standardizing pallets for drum handling, dealing with small-lot shipments not easily consolidated into single-pallet units, and handling long items that do not readily conform to standard pallet specifications.

■ Background and purpose of creating the guidelines

The Chemicals WG aims, through its activities to promote palletization, to achieve sustainable logistics by reducing the workload of drivers, cargo handlers and other logistics workers via unit-level handling, which serves as the foundation of the physical internet.

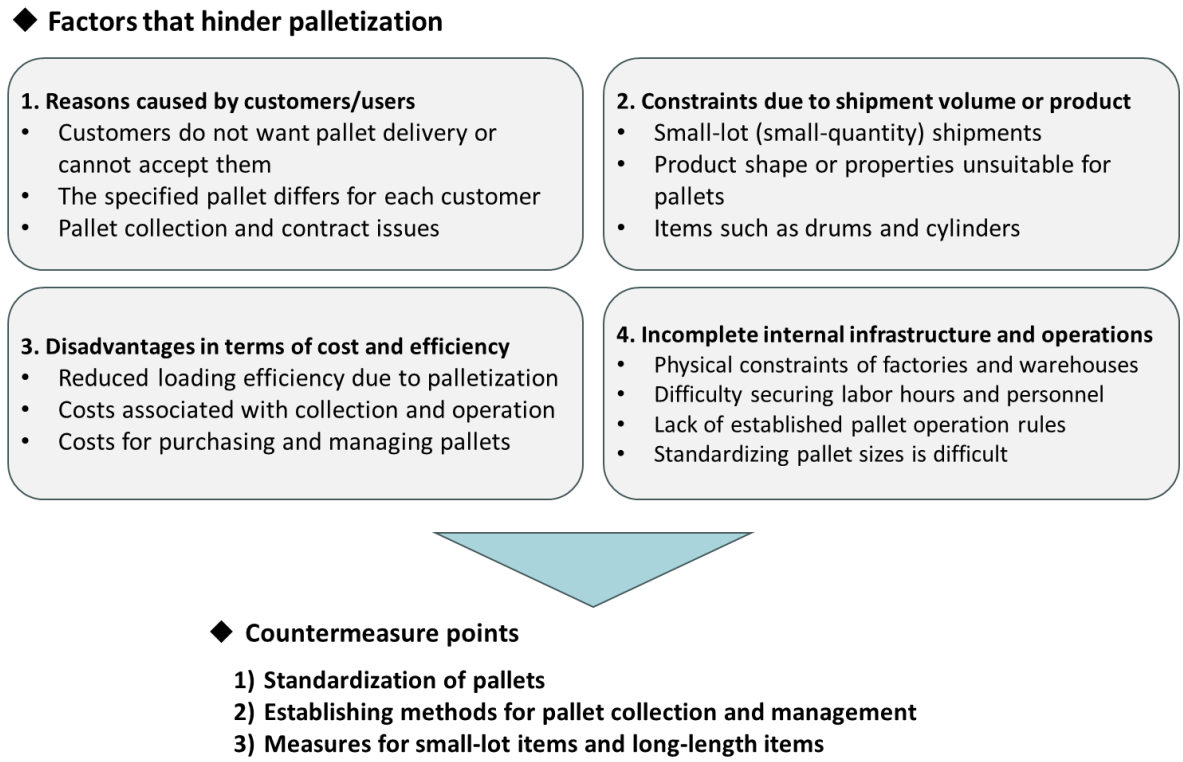
Specifically, the Chemicals WG is addressing the issue from the following four perspectives, with the ultimate goal of achieving integrated palletization[*3].
(1) Safety: Liberating workers from manual cargo handling will lead to a reduction in occupational injuries and help alleviate the physical burden.
(2) Logistics stability: Securing workers of all ages and genders will become easier.
(3) Quality improvements: Opportunities for damage to external packaging can be minimized.
(4) Streamlining: Palletization will help to improve operational efficiency.

■ Environmental awareness

Under Article 42 of the Logistics Efficiency Act, consignors must strive to reduce driver waiting times and improve loading efficiency when entrusting the transportation of cargo and during cargo handover. Palletization is crucial to addressing this requirement.

While a 2025 survey conducted by the Chemicals WG showed growing use of palletization compared to the previous year, the level remains insufficient, and further improvement is still required.

The Chemicals WG therefore analyzed the factors impeding palletization in the chemical industry and put together the following set of measures to address them.



Focusing on the points above, the Chemicals WG intends to draw up guidelines to improve safety and productivity in chemical logistics, as well as reduce the burden on drivers, thereby contributing to the optimization of the entire supply chain.

*1 Chemicals Working Group
Chair: Professor YANO Yuji, Ryutsu Keizai University
Secretariat: Mitsubishi Chemical, Mitsui Chemicals, Tosoh, Toray
As of December 2025, participants in this working group include 83 member organizations (82 companies and one university), most of them consignors and logistics providers, along with the Japan Chemical Industry Association, the Japan Petrochemical Industry Association and relevant divisions within METI and MLIT.
Announcement on December 20, 2023: Voluntary Action Plan for the Proper Management and Productivity Improvement of Chemical Logistics
https://www.cas.go.jp/jp/seisaku/buturyu_kakushin/jk_pdf/28.pdf

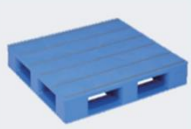
*2 Physical Internet Realization Council
An organization established by METI and MLIT in October 2021 to formulate a roadmap for achieving a physical internet in Japan.
https://www.meti.go.jp/shingikai/mono_info_service/physical_internet/index.html

*3 Integrated palletization
A logistics method in which goods are transported on the same pallet throughout all handling stages, from the shipping origin to the delivery destination, without intermediate reloading.

Draft Operational Guidelines

1. Standardization of pallets

- Pallet types 11, 14 and 1112 will be the standard.
- In the case of small-lot products, companies are to make efforts to ensure that orders are placed and accepted in single-pallet units, as far as possible. Box pallets or similar load carriers are to be used when transporting small-lot shipments. The use of fold decks and similar load carriers is also recommended.
- The use of easily handled load carriers for long items is encouraged.

Pallet	Type 11	Type 14	Type 1112	Small lot products	Long-sized products
Image					
Specifications	No specified material 1,100*1,100	No specified material 1,100*1,400	No specified material 1,100*1,200	No specified material Use Type 11, Type 12, Type 14	No specified material
Intended use	Various packaging types	Various packaging types Paper bags, etc.	Various packing types Drums, etc.	Small lot product handling	Long size product handling

*Background to consideration of the type 1112 pallet

- Cargo handling of drums in particular often requires manual handling or use of a drum grabber. The new type 1112 pallet, which matches drum sizes and ensures loading efficiency, has been chosen as a means of eliminating finger entrapment and other occupational injuries during handling, and securing more workers for drum transportation by eliminating the need for direct handling of drums.

◆Elimination of Industrial Accidents (Finger Pinching) during Drum Can Cargo Handling

◆Securing Carriers for Drum Can Transport (Eliminating Handling of Drum Cans)

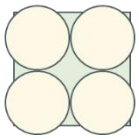
Loading with manual drum handling

Using drum clippers still involves manual labor and carries risks

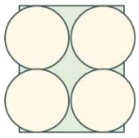
There is no pallet suitable for drum loading among the existing pallets
・11-type (1100*1100) → Large overhang of the drum cans
・12-type (1200*1000) → Large overhang on the 1000 side
・14-type (1400*1100) → Loading efficiency decreases

Newly selected type 1112 (1100*1200)
① Less protrusion of the drum can (see below)
② Same loading efficiency as type 11 (see supplementary materials)
③ Can also be used with existing 11-type racks

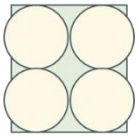
① Size 11 (1100*1100)
Overhang on both sides



② Type 12 (1200*1000)
Excess of 1000 is large

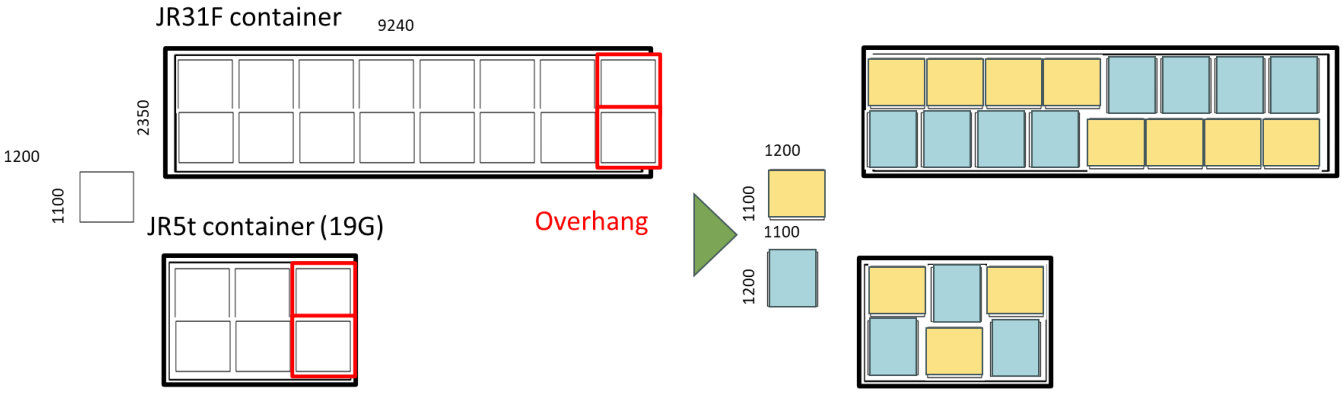


③ Type 1112 (1100*1200)
Between type 11 and type 12



◆ **Loading method using Type 1112 pallets**

By adopting four-way entry pallets and adjusting the loading orientation, it is possible to load the same number of pallets as with Type 11 pallets.



◆ **Number of pallets that can be loaded in each container**

	Inner dimensions (mm)	10t truck	20F container	JR31F container	JR5t container (19D)	JR5t container (19G)
	Length	9,600	5,860	9,240	3,647	3,587
	Width	2,350	2,350	2,350	2,275	2,325
Type11		16 sheets	10 sheets	16 sheets	6 sheets	6 sheets
Type14		12 sheets	8 sheets	12 sheets	4 sheets	4 sheets
Type1112		16 sheets	10 sheets	16 sheets	6 sheets	6 sheets

2. Establishment of methods for pallet collection and management

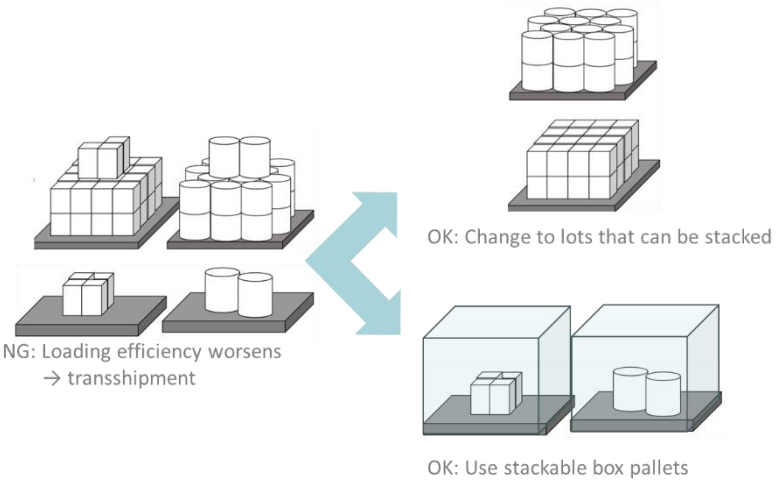
- As standardization progresses, companies should pursue the efficient collection of pallets by making use of pallet leasing services and pallet collection networks.
- Companies should comply with MLIT recommendations for the use of pallets.

3. Measures for small-lot shipments and long items

Small-lot handling

- Single-pallet units should form the basis of orders, as a general rule.
- For orders less than a single pallet, companies should collaborate with logistics providers to improve loading efficiency by using load carriers such as box pallets and truck decks.

Eliminate manual handling during small-lot shipments and improve loading efficiency



Recommended load carriers for transporting long items

- Companies should pursue integrated palletization by using the recommended load carriers, even in the case of long items that are harder to handle.

Recommended Packaging Materials	Packaging Material Image	Overview	Introduction Benefits	Example of Usage Packaging
Roll Film Tray		Using trays for unstable cylindrical products allows stable storage and transportation.	✓ Improvement of Storage Efficiency ✓ Improvement of Transportation Efficiency ✓ Improvement of Transportation Quality ✓ Improvement of Workability	Roll products  Pipe products 
Suspended packaging		By suspending and packaging unstable cylindrical products by clamping them at both ends, stable storage and transportation are made possible. They can also be loaded onto pallets and, when not in use, can be stacked for storage.	✓ Improved storage efficiency ✓ Improved transportation efficiency ✓ Improved transportation quality ✓ Improvement of work efficiency ✓ Reusable, waste reduction	
Roll pallet		By supporting large-diameter cylindrical products with specially shaped packing materials on the pallet, stable storage and transportation on the pallet are made possible.	✓ Improvement of transportation quality ✓ Improvement of work efficiency ✓ Realizing stable palletizing transportation of large-diameter cylindrical products ✓ Reusable, waste reduction	
Post Pallet		Unstable long products can be transported with cargo loaded on them like a pallet, and they can also be stacked using posts (supports). Can be folded when not in use.	✓ Improved storage efficiency ✓ Improved transportation efficiency ✓ Improved transportation quality ✓ Improved workability ✓ Can accommodate various packing styles ✓ Reusable, waste reduction	Long carton  Sheet products 
Large pallet		Large pallets that are in high demand for long items, etc.	✓ Improved storage efficiency ✓ Improved transport efficiency ✓ Improved transport quality ✓ Improved workability ✓ Reusable, waste reduction	
Fold deck		By installing a deck on the truck or JR container bed, it enables safe double stacking of cargo that is difficult to stack. Can be folded when not in use.	✓ Improvement of transportation efficiency ✓ Improvement of transportation quality ✓ Improvement of workability ✓ Compatible with various cargo shapes ✓ Reusable, Waste Reduction	Long-Length Items in General