

PPG Industrial Segment uses bulk transport in the following ways:

1. Solvents transported to our resin and paint manufacturing sites.
2. Resins, monomers, and any non-solvent product transported from our suppliers to our resin and paint manufacturing sites.
3. Resins and intermediate blends/products transported from one PPG site to another.
4. Finished products transported from PPG to our customer sites.

Small amounts of low surface tension contamination can cause significant contamination in PPG's resins, intermediates, or coatings. Guidelines and requirements for the selection, cleaning, and inspection of tank/container must be followed.

The following applies to Road tanker / tank wagon (all typology) or Iso Tank container (all typology including swap bodies) named below as tank/container used for PPG Industrial Segment business:

Where possible, use dedicated tank/container for deliveries to PPG facilities.

If the tank/container is not dedicated, then tank/container selection must meet the following criteria:

- The last prior content for a solvent delivery **must be another solvent (see TABLE 1)**.
- The last prior content for a non-solvent delivery (resin, monomers,...) **must NOT be a material on the prohibited list (see TABLE 2)**.
- The last prior content for a powder state delivery **must NOT be a material on the prohibited list (see TABLE 3)**.
- If a supplier will start delivering some powder state material, it is strongly recommended to check with the quality and technical in the local PPG site to get additional information on the approved prior contents.
- Documentation indicating the prior load (e.g., wash ticket) must be available to PPG receiving personnel upon arrival.
- If the name of the previous load in the cleaning certificate is a commercial name that is not known by PPG receiving facility, the **SDS & TDS is required preferable in the local language and at least in English** to check the compatibility according to the TABLE 1, 2 & 3 below.

Solvent Refiles

Suppliers filling solvent must ensure that the carriers loading and handling solvent in their facilities must follow the prior-load rules according to Bulk Transport Requirements for solvent deliveries.

If there are any questions regarding a prior load, check with the Quality manager at the PPG receiving site prior to tank/container selection

=====

TABLE 1 Approved Prior Contents for a Solvent Delivery*

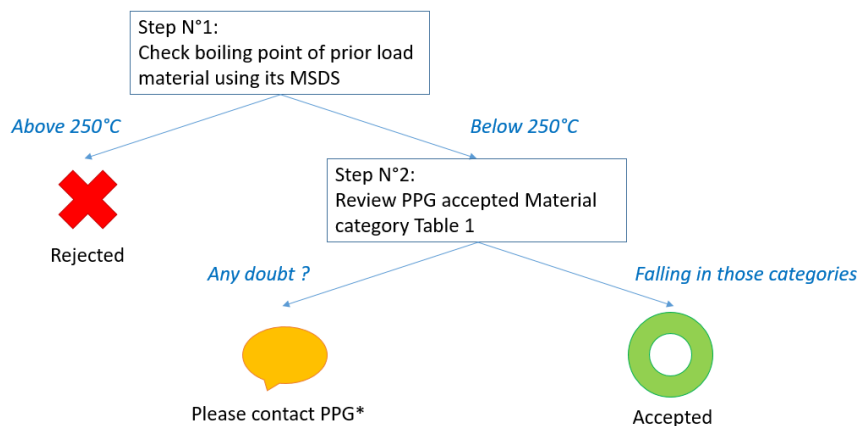
Alcohols ⁽¹⁾	Aliphatics / Aromatics	Acetates
Glycol Ethers	Amid solvents	Esters / Ethers
Glycol Ether Esters	Naphtha / Mineral Spirits	Ketones

*Commonly used as solvent, thinner, co-solvent, in the paint and coatings industry. Pure or blended solvents with ending boiling point at max. 250°C

⁽¹⁾ Excluding fatty alcohols with C atoms >= C10.

In case of non-dedicated tanker, but the previous load has been the same family, ONLY for solvents, the cleaning certificated is not needed, only a formal declaration of pre-load signed off by a responsible person from the carrier.

Important Steps to select the right prior-load for solvent deliveries:



*Please refer to this link to find the right Quality and Purchasing contact per PPG location:
<https://procurement.ppg.com/getmedia/8d16c53c-dac3-4a90-b2d3-2013b214e598/PPG-Industrial-Segment-Contact-List.pdf>

Bulk Transport Requirements – PPG Industrial Segment



Version: 2

Rev: Nov 2023

TABLE 2 Prohibited Prior Contents for a Liquid Non-solvent Delivery

	Low Surface Tension Materials	Oils & Greases	Strong Inorganic Acids & Bases ⁽¹⁾	Colorants Pigments	Others ⁽²⁾
Examples	Silicone based materials	Lubricant and machine oils Brake fluids	Hydrochloric / Perchloric	Dyes	Plasticizers (viscosity > 500 mPas-1) Fatty acids and fatty alcohols with C atoms >= C10
	Fluorine based materials	Petroleums, Gasoline, Diesel, Kerosene	Sodium Hydroxide	Pigments/Colorants Dispersions	Emulsions Dispersions
	Surfactants, Deformers, Dispersants*: e.g., liquid sulfonate, ethoxylate and /or propoxyl based and their solutions	Silicone Oils/ Silicone Greases Waxes	Nitric Acid	Pigments & fillers slurries Paints & primers (could be film forming)	Halogenated hydrocarbons Liquid to waxy (any kind of material)
	Release agents	Animal/Rendered greases			Latex with easily film forming Biocides** Sand***

(1) Can be accepted after rinse with water and pH measured as neutral (EFTCO Code T20)

(2) Can be accepted after caustic cleaning (EFTCO Code C30).

General rule excluding ⁽¹⁾ and ⁽²⁾ and solid-state products, if prior content is fully soluble in water the material would be acceptable.

*Prohibited if the viscosity > 2.000 m.Pas-1. If the loading material is surfactant, defoamer or dispersant, any prior load with the same family is approved after cleaning.

**Biocides are prohibited for sites manufacturing packaging coatings (food contact regulation).

***Sand is prohibited as pre-load for road tankers to be used for finished products for sites manufacturing Silicas (see PPG Industrial Segment Sites and Contact List) in scope of this requirements). Other prohibited products are not applicable, but a cleaning document must be available when non dedicated transport is used.

If prior content is a **main** ingredient of the loaded material would be acceptable (i.e., formaldehyde as prior content of melamine resin. Soy bean oil, castor oil as ingredient of polyester or alkyd resins)

Additional information:

Solvent used for flushing or cleaning is not considered the prior load

Silicone refers to poly-siloxanes – e.g. poly-di-methyl siloxane (PDMS)

Fluorine based – e.g. perfluoropolyether (PFPE) or polytetrafluoroethylene (PTFE)



TABLE 3 – Prohibited/Permitted prior contents for a powder state product

Category	Prohibited Pre-loads Examples	Permitted Pre-loads Examples
Epoxy	Polyols (TMPD, NPG,...etc). Inorganic metallic salt (carbonates, sulfates, nitrates, acetates,...etc.). Inorganic Oxides & Silicates (Silica, Titanium Dioxide, Alumina, etc.). Black powder pigment (carbon black). Any kind of pigment and Fillers. Silicone and derivates.	Epoxy family of products
Extenders/Fillers/ Inorganic metals/ Titanium dioxide	Any product that is not from the same family	Previous load must be the same family of products
Monomers	Any reactant forming gels	Monomers
Pigments	Any product that is not from the same type/family of pigment and color	Previous load must be the same type/family of pigment and color

Supplier is fully responsible to deliver material free of any contamination.

When there is a failure to supply the correct pre-load, PPG reserves the rights to bill the supplier for the cost incurred including material and labor cost associated with the non-conformity.

Tank/container with more than one compartment shall have a label directly at the valves to prevent connections to the incorrect compartment for sampling and off-loading.

Newly fabricated or internally repaired tank/container present a higher risk with regard to low surface tension contaminants being present – additional cleaning will be required before putting into service for PPG materials.

Detergent or caustic residue from the cleaning process can cause defects in our products if not completely rinsed from the interior surface. The pH of the rinse water should fall between 6.5 and 7.5.

For European locations (PPG EMEA), for non-dedicated tankers or when prior load differs from the delivery load, all tankers must be cleaned prior to loading the intended delivery. Transport companies should use EFTCO and/or PPG approved cleaning stations.

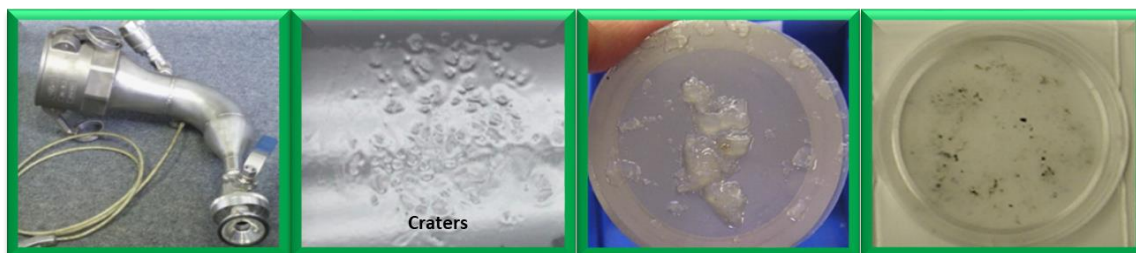
The cleaning certificate is mandatory for loading and unloading processes. Ensure that the driver provides the original copy (not electronic) of the EFTCO cleaning certificate.



The test for pH of the rinse water must be indicated on the cleaning certificate according to code “T20”.

Tank/container **Sampling and Testing – Incoming Solvents and Resins**

At PPG facilities, inbound solvent tank/container are sampled for evaluation. Where possible, the tank/container is sampled from the bottom valve using a filter fixture attached to a small filter housing. The filter is removed from the housing to evaluate for dirt and gels (see pictures below). Solvent and some resin samples are tested for crater causing contamination prior to approval of the load.



Bulk Transport Requirements – PPG Industrial Segment



Version: 2

Rev: Nov 2023

Solvents that require "Anti-Stat" additions are tested for conductivity to ensure compliance with safety requirements.

Tank/container deliveries to PPG's Customers which are not dedicated require review of the last 3 prior loads. All 3 of the prior loads must meet the criteria in TABLE 2. For solvent/thinners please refer to TABLE 1.

In addition to having the cleaning documentation with the last load available, the transport company must also be able to provide the identity of the second and third last load upon request.

NOTE: For deliveries to and from PPG sites, requirements may differ in different countries and regions. Please ensure that you have contacted your local PPG Purchasing representative to confirm the PPG location specific requirements.