

Subject: **DEC-TEC MEMBRANES & ORTHO-PHTHALATES (PLASTICIZERS)**

Product Pre-Installation Installation Repair Maintenance Other
 External Internal Use Internal Use Only

Target Audience: At Technical Director's discretion.
Reason for Bulletin: To provide clarity on the relationship between Dec-Tec Membranes and ortho-phthalates as it relates to health and safety laws in the state of California.

Details:

Basic Introduction to Ortho-phthalates and Dec-Tec

What are Ortho-phthalates?

Ortho-phthalates are the most commonly used plasticizers in the world.

What are Plasticizers?

Plasticizers are additives that alter a materials physical properties. Specifically, plasticizers increase plasticity and flexibility thus reducing the brittleness of a material.

How do they relate to Dec-Tec Membranes?

Dec-Tec is a polyvinyl chloride (PVC) membrane. Therefore, the ortho-phthalates are plasticizers that allow for Dec-Tec PVC membranes to have high plasticity and flexibility.

Background and Distinctions between Ortho-phthalates

Asia is the largest consumer accounting for 3.5m tonnes/year; Europe is at about 1 million tonnes and the US is at about 800,000 tonnes/year. Ortho-phthalates can be found in a wide range of everyday items including electrical cables, hoses, flooring, wall coverings, coated textiles, luggage, sports equipment, roofing membranes, pool liners, footwear, as well as life-saving medical devices such as tubing and blood bags. In addition, some phthalates are used in non-PVC applications such as coatings, rubber products, adhesives, and sealants.

Ortho-phthalates are broadly divided into two distinct groups based on applications, toxicological properties, classification, legal requirements, cost, and performance. The groupings are:

1. High Molecular Weight (HMW) ortho-phthalates;
 - a. 7-13 carbon atoms in their chemical backbone, which gives them increased permanency and durability.
 - b. Most common types are DINP, DPHP, DIDP, DIUP, and DTDP.
 - c. HMW ortho-phthalates are commonly used in PVC products such as wire and cables, flooring, truck tarpaulins, wall coverings, self-adhesive films or labels, synthetic leather, coated fabrics, technical foils, roofing membranes, and automotive applications.
 - d. Risk assessments have shown positive results regarding the safe use of this group of substances. Precautionary restrictions for toys and childcare articles which can be placed in the mouth exist for DINP and DIDP, based on liver effects at high doses observed in rat studies.

2. Low Molecular Weight (LMW) ortho-phthalates:
 - a. Less than 3 carbon atoms in their backbone.
 - b. Most common types are DOP, DMP, and DEP.
 - c. Very specific applications not related to PVC include use in household and personal care products like cosmetics.
 - d. They have not been classified or restricted because they do not pose any risks for our health or the environment.

However, environmental and health concerns being attributed to ortho-phthalates - more so to low phthalates such as DOP - have led to a decline in their use due to a growing focus to use more environmentally-friendly compounds such as dioctyltere-phthalate (DOTP).

- DOP is the most common low-phthalate plasticizer worldwide. It is most widely used in Asia. While it is no longer used in the US to any significant extent, DOP is an important plasticizer in Latin America.
- DINP is a high-phthalate plasticizer. It is widely used in the US, and is the most widely used plasticizer in Europe and is the second largest plasticizer in Asia. This is one of the plasticizers used in Dec-Tec PVC membranes.
- DOTP is a tere-phthalate plasticizer (not an ortho-phthalate). This general purpose compound is growing fast in volume and is taking share not only from DOP but also increasingly from DINP.
- DPHP is a decyl-phthalate used in applications such as the production of artificial leather for automobiles, and for wire and cable coatings.
- DINCH was developed for use in applications that are sensitive based on exposure and toxicological issues. It is often used in the production of medical products and toys.

Dec-Tec membranes are made with ortho-phthalates.

Ortho-phthalates in Dec-Tec as They Relate to Health and Safety in California

California Proposition 65: <https://oehha.ca.gov/proposition-65>

Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted as a ballot initiative in November 1986. The proposition protects the state's drinking water sources from being contaminated with chemicals known to cause cancer, birth defects or other reproductive harm, and requires businesses to inform Californians about exposures to such chemicals.

- Diisononyl Phthalate (DINP) is on their Chemicals Considered or Listed Under Prop 65
- <https://oehha.ca.gov/proposition-65/chemicals/diisononyl-phthalate-dinp>
- This is as it relates to drinking water.
- It is very important to note; to address the use of DINP as it relates to certain single ply polyvinyl chloride roofing membrane products, the OEHHA issued a statement on June 24th, 2016 as it relates to the product and it's 'safe use determination (SUD)', which found the following:

"The products that are the subject of the SUD are SP PVC roofing membrane products with a nominal thickness of between 1.016 to 2.438 (40 to 96 mils), containing no more than 15 percent DINP and heated

to surface temperatures up to and including 210°C during installation.”

- Stan Graveline of Sika Sarnafil initiated the SUD (Safe Use Determination) for use of DINP in roofing membrane. The level in the SUD states <15%.
- Dec-Tec membrane products, although not roofing, are single ply decking membranes with nominal thicknesses of 48, 60 and 90 mils. All Dec-Tec membranes satisfy the less than 15% threshold noted above.

An important piece of information (found here <https://www.medline.com/help/caprop65/>) also addressing safety concerns of DINP used within the medical industry states:

- *“The California Office of Environmental Health Hazard Assessment has added DINP to the Proposition 65 list of chemicals “known to the State of California to cause cancer.” As stated above, the listing of a chemical does not necessarily mean a product containing the chemical is in “violation of any product-safety standards.” As a result of Prop 65, manufacturers selling products containing DINP in California are required to either remove DINP from their products or provide a clear and reasonable warning to customers prior to purchase and/or use. In response to this law, Medline is adding warning labels to our vinyl glove products sold in California.*

Medline has also evaluated any potential health risks to nurses and other care providers using the gloves. Based on leaching DINP would not pose any significant health risks to nurses and other care providers using the gloves.”

- To summarize the above, it has been deemed acceptable for medical teams in the State of California to use gloves with DINP in them.

Conclusions

In regards to Home Depot and the Dec-Tec DIY line, when the membrane is shipped into the state of California the membrane will have an appropriate Prop 65 label on it.

If Dec-Tec membranes were properly categorized some of these issues addressed above would become irrelevant.

Additional References (include but not limited to):

<https://www.plasticisers.org/plasticiser/orthophthalates/>

<https://s3-eu-west-1.amazonaws.com/cjp-rbi-icis-compliance/wp-content/uploads/2013/08/Plasticizers-Methodology.pdf>

<https://oehha.ca.gov/proposition-65>

DEC-TECHNICAL BULLETIN



If you have any questions concerning this bulletin, please contact Dec-Tec, Technical Support at 1-866-461-3914.

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