



UPDATE

Equipment Guidelines for MDI, TDI and Polyol Storage Tanks

This checklist has been developed as part of Covestro's Product Safety First program to provide guidelines and requirements for storage tank systems in service for MDI, TDI and polyol products.

The information furnished is not all-inclusive. However, it is intended to provide a fundamental **starting point** for new bulk installations and to determine whether an existing facility meets the minimum standards established by Covestro.

It is the responsibility of the receiving site to ensure compliance with all applicable local, state and federal regulations. References to specific regulations are for receiving sites within the United States.

In addition to safely manufacturing and delivering quality products, Covestro provides valuable support and services to its customers. Our coordinated staff of technical, research and application development specialists works directly with systems suppliers, converters, distributors and end-product manufacturers to assist in the safe handling of Covestro products.

Covestro's Transport & Logistics Safety Department promotes the safe handling and distribution of Covestro products by assisting customers with equipment guidelines and requirements, and well as best practices for receiving, unloading, storing and handling these materials. On site consultations are conducted to promote worker safety and to assist with regulatory compliance.



**PRODUCT
SAFETY
FIRST**

Equipment Guidelines for MDI, TDI and Polyol Storage Tanks

EQUIPMENT / ITEMS	PRODUCT FAMILIES			
	MMDI	PMDI	TDI	Polyols
Impervious spill containment	●	●	●	●
Tank location				
Above ground	✓	✓	✓	✓
Vessel construction				
Unlined carbon steel		✓	✓	✓
Lined carbon steel	■	■	▲	▲
Stainless steel	✓	■	▲	▲
Pressure/vacuum rating				
API or ASME rated	●	●	●	●
Full vacuum	●	●	●	●
Pressure protection				
Primary	✓	✓	✓	✓
Secondary	●	●	●	●
Vacuum protection				
Primary	✓	✓	✓	✓
Secondary	●	●	●	●
Level indicator (glass/plastic sight tube not recommended)	✓	✓	✓	✓
Level alarms				
Low alarm	●	●	●	●
High alarm	●	●	●	●
High-high level switch				
Independent of level indication system	●	●	●	●
Terminates flow into tank	●	●	●	●
Tank temperature control	✓ (not steam)	✓	✓	✓
Insulation	✓	▲	▲	▲
Temperature gauges	✓	✓	✓	✓
Low temperature alarm	✓	●	●	●
High temperature alarm	✓	●	●	●
Dry air or nitrogen source (-40°F/°C dew point)	✓	✓	✓	▲

✓ Covestro Requirement ● Best Industry Practice ▲ Application Dependent ■ Approved Alternative

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EQUIPMENT / ITEMS	PRODUCT FAMILIES			
	MMDI	PMDI	TDI	Polyols
Treatment of vapors from tank	●	●	✓	●
Activated carbon bed	●	●	●	●
Vapor return to rail car or tank truck	●	●	●	●
Tank agitation	▲	▲	▲	▲
Tank recirculation system	●	●	●	●
Transfer and/or unloading pump				
Sealless type	●	●	●	●
Strainer on pump suction side	●	●	●	●
Pressure gauge on pump discharge side	●	●	●	●
Drain valves capped/plugged when not in use	✓	✓	✓	✓
Inside containment	●	●	●	●
Piping				
Material of construction				
Carbon steel		✓	✓	✓
Stainless steel	✓	■	▲	▲
Flanged, welded pipe connections	●	●	●	●
Heat tracing	✓	▲	▲	▲
Insulation	✓	▲	▲	▲
Filters				
Drain/vent valves with caps or plugs	✓	✓	✓	✓
Pressure gauge on both sides of filter	●	●	●	●
Inside containment	●	●	●	●
Access to safety shower & eye wash	✓	✓	✓	✓

✓ Covestro Requirement ● Best Industry Practice ▲ Application Dependent ■ Approved Alternative

Notes _____



Always Raising the Bar in Managing Chemicals Safely

Today, it is not enough to publicly commit to preventing pollution, improving process safety, fostering employee health and safety, providing product stewardship, and building positive relationships with plant neighbors and communities. A responsible company must lead by example. At Covestro, we've taken the initiative in advancing the science of chemical risk management both at our facilities and at our customers' sites. We consider such an effort progressive product stewardship and we call that effort our Product Safety First program.



RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

Our product stewardship team continuously expands outreach programs for new and current customers. The multi-phased, comprehensive Product Safety First approach includes health, safety and environmental services to support and educate users on the safe storage, handling, use and disposal of our products. Product Safety First initiatives, through our commitment to continuous improvement, encourage customers to elevate their procedures to "best industry practice" levels. At Covestro, we're never content to rest on our laurels. Our product stewardship program is not just another corporate activity; it's our upwardly mobile standard for conducting business.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Covestro products mentioned in this publication. Before working with any of these products, you must read and become familiar with the available information on their characteristics, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., safety data sheets (SDS) and product labels. Consult your Covestro representative or contact the Transport & Logistics Safety Department or Product Safety and Regulatory Affairs Department in Pittsburgh, Pennsylvania at 1-412-413-2000.

For materials that are not Covestro products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.



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The information contained herein is believed to be accurate as of the date of this document. The purpose for or manner in which you apply or utilize our products, technical assistance and information, whether verbal, written or by way of production evaluations, including any suggested formulations and recommendations, are beyond our control. It is imperative that you test our products to determine their suitability from a technical as well as health, safety, and environmental standpoint for your intended uses or applications. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee, expressed or implied, and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our technical assistance and information. Any statement or recommendation not contained herein shall not bind us. Covestro assumes no legal responsibility for use of or reliance upon the information in this document. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. Before working with our products, you must read and become familiar with all available information on the risks, proper use, and handling. Information is available in several forms, e.g., safety data sheets, product labels and other safe use and handling literature for chemical substance(s). The most current health and safety information regarding our products, including Safety Data Sheets (SDSs), is available at the Product Safety First website (www.productsafetyfirst.covestro.com). For further information contact your Covestro representative or the Product Safety and Regulatory Affairs Department in Pittsburgh, PA.