



ISOPA PRODUCT STEWARDSHIP PROGRAMMES

“Walk the Talk”

Pentane

Hazardous Properties of Pentane

- Flash Point: -40°C to -20°C
(the lowest temperature at which liquid releases sufficient vapour for ignition)
- Auto ignition temperature ca. 280°C
(where the vapour-air mixture ignites on a hot surface.)
- Explosive vapour-air mixtures:
Lower explosion limit: $1,4 \text{ Vol}\% = 41 \text{ g/m}^3$
Upper explosion limit $7,8 \text{ Vol}\% = 240 \text{ g/m}^3$
(Evaporation rate at $20^{\circ}\text{C} - 30^{\circ}\text{C} > 2,4 \text{ kg/h per m}^2$ surface)
Vapour has higher density than air!
- Easy build-up of electric charge.
- Highly flammable.



Protective Measures

Avoid explosive atmosphere (primary measure)

- No open handling, closed systems.
- Controlled ventilation.
- Generate inert atmosphere with Nitrogen.
- **Avoid sources of ignition (secondary measures)**
- Explosion protected machinery (encapsulation, no sparks, no hot surfaces)
- Avoid electrostatic sparks (earth machinery, no plastic containers)



Incident / Alarm

- **In case of spillage or alarm from monitors**

Keep calm

- **Stop pentane dosage, avoid ignition sources**

Increase ventilation

Stop leakage

Cover spillage with absorbant

Self-contained breathing apparatus if ventilation is insufficient

Protective clothing

Extinguishing material: CO₂, Foam, Powder; no water!



Use of Pentane

Pentane is highly flammable and may build up explosive mixtures with air

- Avoid any ignition source
- Ensure that static electricity cannot build-up
- Monitor level of pentane in air; remember that pentane is heavier than air



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Catalysts

Catalysts

- Catalysts can be corrosive, irritants, sensitisers and flammable
- Symptoms of exposure include chemical burn, swelling, itching, redness and hazy vision
- Use PPE when working with catalysts and polyol formulation components

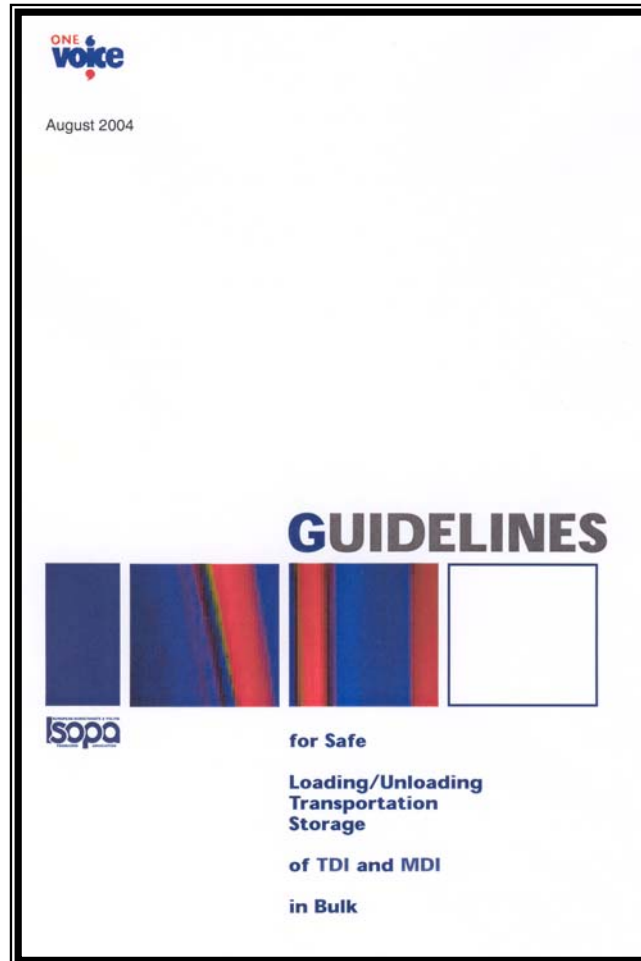


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Loading, Transport and Unloading

ISOPA's Guidelines for Loading, Transportation and Unloading of TDI and MDI in Bulk





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Methyl Isocyanates

Monoisocyanates and Diisocyanates

- Monoisocyanates are used for various applications – but not for polyurethanes

For example, methyl isocyanate is used for pesticides and insecticides

- All polyurethanes are made with diisocyanates such as MDI or TDI

Monoisocyanates and Diisocyanates

- Monoisocyanates are used for various applications – but not for polyurethanes.
For example, they are used in pesticides.
- All polyurethanes are made from diisocyanates such as MDI or TDI.

*Methyl-isocyanate
is not used in
making polyurethanes*

Disclaimer

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