

LABELLING OF MDI WITH H351 - BACKGROUND

There have been repeated questions concerning the classification and labelling of MDI products from users of polyurethane systems. Hazard statement H351 on the carcinogenic effect of MDI is particularly a source of irritation. We would therefore like to explain the background on this and the effects this EU classification will have for commercial use.

Classification with H351 "Suspected of causing cancer" Carcinogenicity Category 2 according to CLP is based on animal studies in which rats were exposed over long periods of time to high concentrations (100 times above the OEL of 0.05 mg/m³) to synthetically produced, especially fine-particle MDI aerosols. Such high concentrations of MDI aerosols that damage lungs do not occur even in spraying applications.

When mixing and applying systems intended for manual application (e.g. with a brush, roller, squeegee) practically no aerosols form and since MDI also has very low vapour pressure, relevant vapour concentrations are not to be expected.

The following GHS pictograms as well as the signal word "Danger" must be affixed to monomer MDI.



Know the Risks and Take Protective Measures:

In Germany, the occupational exposure limit (OEL) – formerly MAK – for MDI is 0.05 mg/m³. When this limit value is observed (TRGS 900), acute and chronic effects on health are not to be expected in general.

As before, the following still applies:

According to measurements carried out by trade associations and manufacturers, occupational exposure limits are observed when MDI is properly handled and the protective measures stated in the Safety Data Sheet are implemented. Protective measures for good practice are also described in the GISCODE Product Group Information in WINGIS maintained by BG Bau and in TRGS 430 "Isocyanates".

In the case of spraying applications, the occupational exposure limit is quickly exceeded and therefore further protective measures – as prescribed by the manufacturers – are necessary. Such measures may include, for example, respiratory masks or ambient-air-independent respiratory equipment.

When products that contain MDI are handed over to users in Germany, the requirements and documentation obligations set out in the Banned Chemicals Ordinance (ChemVerbotsV § 3 and 5), must be observed.

[BGBl_Chem_VerbotsV](#)

Summary:

When the occupational exposure limit (OEL) is observed and the protective measures recommended by trade associations and manufacturers are taken, there is no increased health risk from handling monomer MDI.

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Classification and Labelling of MDI: According to Annex VI of the CLP Regulation (EG) 1272/2008, the following legally binding, harmonised classification of monomer MDI applies:

Hazard statement	Hazards to be observed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye damage/eye irritation cat. 2
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

Classification and Labelling of Mixtures:

Concentration Range	Classification/Labelling
Acute toxicity	according to ATE _{mix} calculation
Concentration ≤ 10	H315, H317, H319, H334, H335, H351, H373
5 % ≤ concentration < 10 %	H315, H317, H319, H334, H335, H351
1 % ≤ concentration < 5 %	H317, H334, H351
0,1 % ≤ concentration < 1 %	H334

The following special labelling must be additionally used for mixtures:

EUH204	Contains isocyanates. May cause allergic reactions.
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