Non Target – News
#26

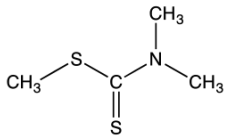
Landesamt für Natur,
Umwelt und Klima
Nordrhein-Westfalen

Methyldimethylcarbamodithioat

Molar mass:
135.2 g/mol

CAS:
3735-92-0

$C_4H_9NS_2$



Methyldimethylcarbamodithioate, also known as methyldimethyldithiocarbamate, Cystogon, or Forbiat, was used in the past as a pesticide.[1] Substances in the dithiocarbamate class are used, among other things, as coagulants, chelating agents, vulcanizing agents, or as intermediates in the manufacture of corrosion inhibitors or pesticides.

The measurements of the LANUK meet the following necessary criteria for clear identification:

1) Match of a reference spectrum
2) Match of the retention time with the reference substance

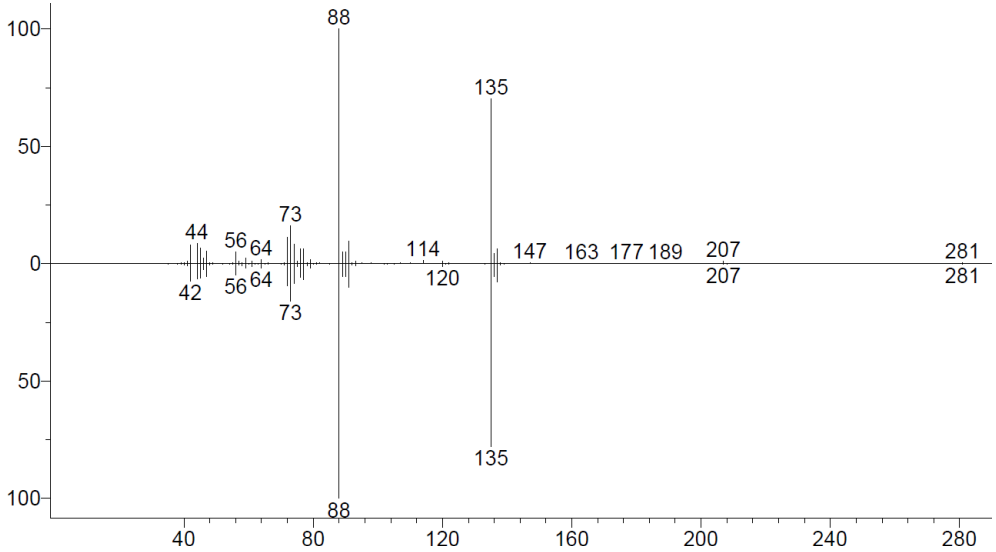


Figure. *1*: comparison of fragment-ion spectra (EI positive), top: reference substance, bottom: sample from the Wupper near Opladen 20.02.2025

Analytics and occurrence

As part of the intensified water monitoring program (INGO), an unknown substance (m/z 88, 135) has been detected in the Ruhr River near Frönden-berg since March 13, 2025, using SPE-GC-MS. Subsequently, the unknown substance was identified as methyldimethylcarbamodithioate using the reference substance. Concentrations were estimated using the internal standard 1,4-dichlorobenzene D4.

[1] https://comptox.epa.gov/dashboard/chemical/details/DTXSID40190797, accessed on 16.04.2026

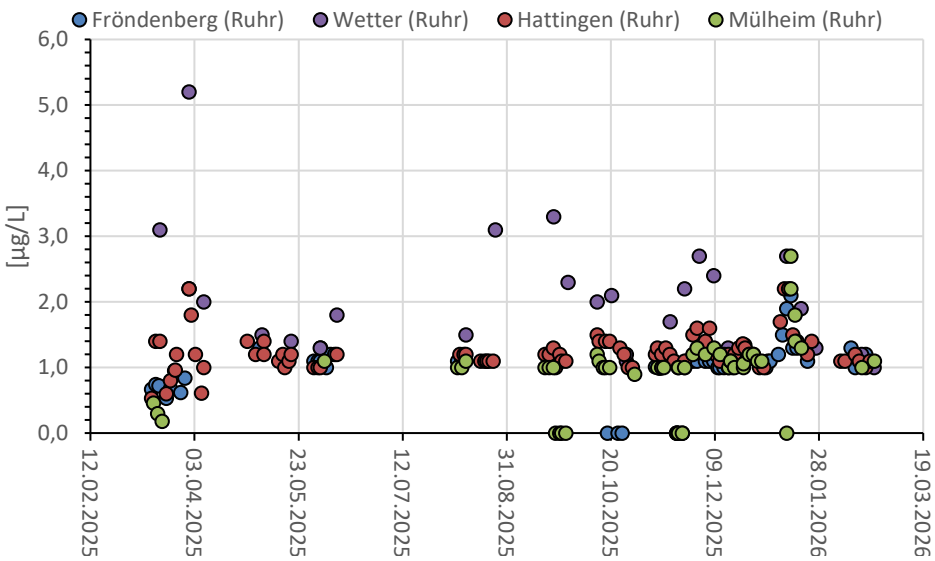


Figure. *2*: concentrations for methyldimethylcarbamodithioate form the intensified water monitoring programme in the Ruhr; results below the lower limit of detection (<1 µg/L) were depicted as 0

In the Ruhr near Wetter, the highest concentration of 5.2 µg/L was recorded in the sample taken on March 31, 2025 (8:42 a.m.). The measurement site upstream at Fröndenberg showed significantly lower concentrations in the range of 1 µg/L during the period under review. At the downstream measurement site near Hattingen, concentrations of 2.2 µg/L were measured in both a single sample (March 31, 2025, 9:25 a.m.) and a composite sample (March 31, 2025, 8 a.m.–4 p.m.). The samples at the Mülheim measurement site, located further upstream, were in the range of 1 µg/L.

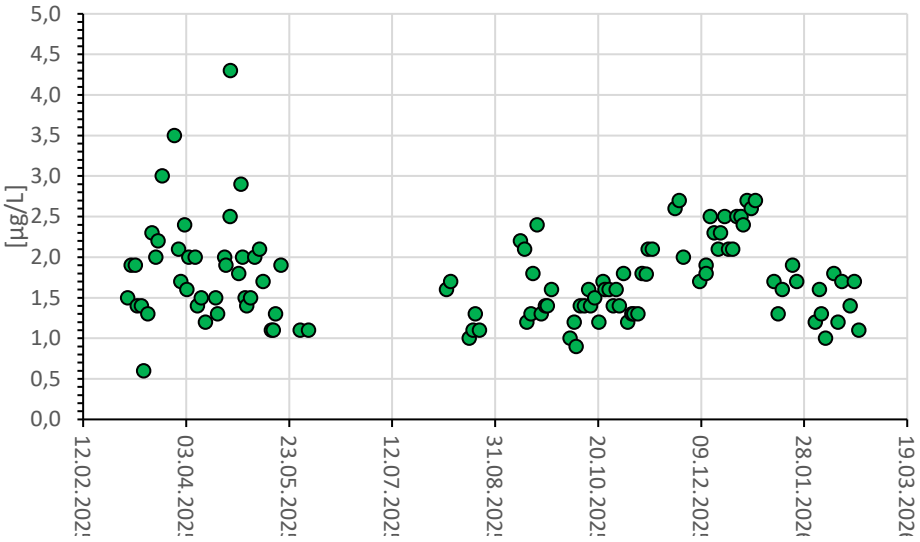


Figure. *3*: concentrations for methyldimethylcarbamodithioate form the intensified water monitoring programme in the Wupper near Opladen

Relevance

No ecotoxicological test results are available for methyldimethylcarbamodithioate. An assessment is not possible due to the lack of data. Methyldimethylcarbamodithioate was used as a pesticide in the past, which indicates that it has a negative effect on organisms.

Modelled data from EPI Suite™ 4.1 indicate that the substance is not readily biodegradable. A high potential for bioaccumulation is not expected.

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For methyldimethylcarbamodithioate, the drinking water limit of 0.1 µg/L is used as the reference value for assessing its impact on drinking water supply.

Based on its properties (mobile, not readily biodegradable, persists in the aqueous phase, low bioaccumulation potential)[2], the substance is classified as potentially relevant to drinking water based on the currently available data. To date, no data are available on the behaviour of the substance in drinking water treatment.

Further procedures:

The responsible water authorities, local water suppliers and downstream users (in the Netherlands) have been notified. The Ruhr and Wupper rivers will continue to be monitored as part of the real-time water monitoring program. Current reports from the real-time water monitoring program are available on the LANUK website

[2] https://comptox.epa.gov/dashboard/chemical/details/DTXSID40190797; accessed on 16.04.2026