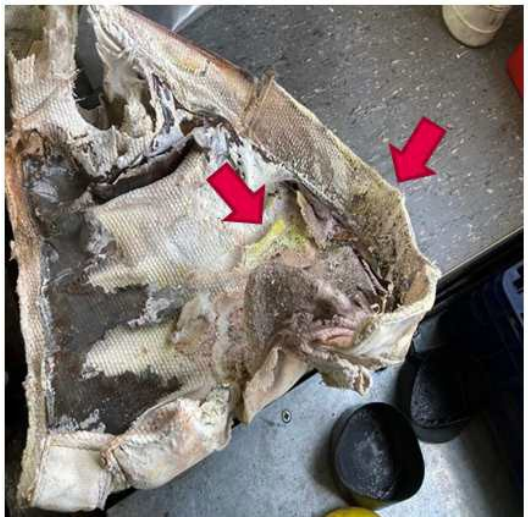
Service Message 8339SM

Topic	**Occurrence of hexavalent chromium-Cr(VI) compounds during operation**

Publication	13.12.2023
Valid	• From the date of publication, until revoked or replaced • Worldwide
Affected engines	• Engines from MAN Truck & Bus SE in off-road, power and marine applications
Affected Components	• Exhaust tract, exhaust gas aftertreatment, as well as components for insulation and heat protection
Circumstance	• In the area of the above components, calcium chromate (Cr(VI) compound) deposits / dusts may be present. • The dusts or deposits are caused by chromium-containing stainless steels in contact with calcium-containing substances such as insulating materials or anti-seize pastes and high thermal load. • Chromium(VI) compounds can lead to adverse health effects or environmental pollution
General information	When new, engines and components from MAN Truck & Bus SE comply with all applicable legal regulations. On the basis of indications from the market, MAN Truck & Bus SE has demonstrated the presence of Cr(VI) compounds on running engine components in its own analyses. Under certain conditions, calcium chromate $CaCrO_4$ can be formed from existing components during operation. These are: • Steels containing Cr (e.g. on exhaust systems) in contact with • Calcium-containing compounds (e.g. in insulating blankets or assembly pastes) • at temperatures > 300°C and in the presence of oxygen Due to these conditions, the occurrence of Cr(VI) compounds is to be expected preferably on – but not limited to – components in the area of the exhaust tract or the exhaust gas aftertreatment. Particularly when working on these components as part of repair or maintenance, appropriate protective measures must be taken. Calcium chromate can be identified as follows (see example images) : • Deposits on components in the form of a yellowish, yellow or orange residue • Crystalline particles or dusts with a yellowish, yellow or orange color that can detach from the component
Possible effects on humans and the environment: 	According to the safety data sheet, calcium chromate can have the following effects on humans and the environment, among others: • H317: May cause allergic skin reactions. • H350: May cause cancer. • H302: Harmful if swallowed. • H410: Very toxic to aquatic life with long-term effects.

This service information is valid in addition to and in conjunction with the standard service documents (repair, operation and maintenance instructions, etc.) as well as the generally applicable regulations on warranty, workshop procedures, etc.
The engine-specific warranty conditions apply to the individual engine at the time of the start date of repair in accordance with the factory order.

Example images:



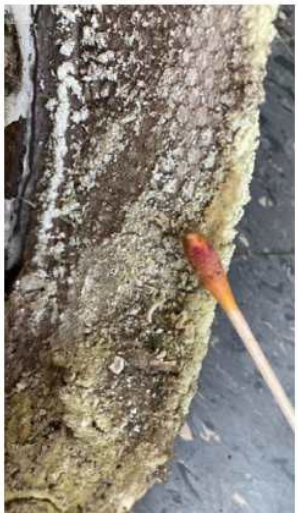


Figure 1: Insulation blanket of an exhaust gas turbocharger with positive Cr(VI) rapid test

Figure 2: Screwed sensors on insulated exhaust pipe with positive Cr(VI) rapid test

Protective measures and Rules:

If you suspect that calcium chromate is present when working on equipment or if you find corresponding residues, you should:

- behave in accordance with the locally applicable occupational safety regulations for the handling of Cr(VI) compounds
- dispose of the affected components as well as contaminated work equipment (PPE, cleaning cloths, etc.) in accordance with the locally applicable legal regulations

The following are some general precautions – without claiming to be exhaustive: Personal

protective measures:

- Avoid inhalation of dusts
- Avoid contact with eyes and skin.
- Wear a respirator with a filter approved for Cr(VI) compounds.
- Wear protective gloves (e.g. disposable nitrile gloves).
- Wear safety goggles

Technical protective measures and rules of conduct:

- Do not stir up dust unnecessarily. Blow-off for cleaning purposes is not permitted.
- Pick up Cr(VI) dust from engine components with an industrial vacuum cleaner before or after disassembly.
  Prerequisite: The industrial vacuum cleaner has been approved by the manufacturer for use with Cr(VI).
- Place disassembled engine components with Cr(VI) wetted dusts carefully (without much swirling) in a sealable labelled container or foil bag.

Hygienic measures and rules of conduct:

- Do not eat food during the dismantling work.
- After finishing and before breaks, clean hands thoroughly with soap.
- Change soiled work clothes immediately.

Ban on calcium-containing assembly

In order to reduce the risk of recurrence of Cr(VI) compounds, only calcium-free assembly pastes suitable for the application may be used for assembly work.

Please take note of the information in this service notice and share it with your customers and employees. Until the product documentation is updated, we recommend that you enclose a printout of this service notice as an insert in the engine documentation.

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