

Castrol ON single phase immersion cooling fluids: Safety & pre-checks



Castrol DC Fluid Operating Guide for Data Centre Operators

This guide is intended to provide general advice and considerations for handling Castrol ON Immersion Cooling Fluids DC 15 and DC 20. It offers a checklist for safety and pre-checks that should be completed prior to handling these fluids, but always consult a Castrol representative for specific instructions or concerns.

1. Application Overview

Castrol ON Immersion Cooling Fluids DC 15 and DC 20 are specifically designed for electrical and electronic cooling in closed-loop systems. These fluids offer:

- **Excellent flow properties**
- **High specific heat for effective thermal management**
- **Superior oxidative and hydrolytic stability**
- **Excellent low-temperature performance**
- **Outstanding dielectric properties (harmless to common construction metals)**

Before using the fluids, it's essential to ensure compatibility with the materials used in your cooling system. Contact your Castrol representative for a detailed list of material compatibility.

2. Product Characteristics

For more detailed information on the fluid properties, such as viscosity, thermal performance, and more, please refer to the **Product Data Sheets (PDS)** of Castrol ON Immersion Cooling Fluids DC 15 and DC 20. Contact your Castrol representative or email liquidcooling@bp.com for access.

3. Safety Considerations

Handling and Safety Requirements

It is crucial for the site's Health, Safety, Security, and Environment (HSSE) team to assess the handling procedures and ensure all operators follow the guidelines provided in the product's **Safety Data Sheet (SDS)**.

- Ensure that the SDS is **available** to all operators handling the fluids.
- Contact Castrol's **Customer Liaison** for a copy of the SDS or with any safety-related queries.
- Operators handling DC 15 and DC 20 must be **trained and competent**.

Exposure Controls

During **normal operations**, the risk of inhaling airborne droplets or aerosols is low. However, during activities like **fluid transfer**, additional precautions should be taken:

- Ensure **adequate ventilation** in the working area.
- Use **pumps** that minimise fluid agitation to reduce aerosol generation.
- Take **regular breaks** to avoid prolonged exposure.
- Use appropriate **Personal Protective Equipment (PPE)** based on risk assessments.

4. Pre-Checks Before Operation

Handling and Safety Requirements

Before beginning any operation involving Castrol ON Immersion Cooling Fluids, the following pre-checks should be completed:

Item no.	Pre-Check Description
1	SDS and PPE available and in use by all operators.
2	Ensure the transfer pump is compatible, suitable, and clean.
3	Check that Castrol product containers are clean, unopened, and defect-free . Confirm the correct product is being used.
4	Perform a visual inspection of the immersion cooling system. Ensure it's free of debris, leaks, and previous fluids.
5	Ensure a spill kit is readily available at the operation site.
6	Have the waste stream process identified and planned for fluid disposal.
7	Manuals for the system components (including tanks and immersion cooling systems) should be available and consulted if necessary.

If the immersion system fails inspection or has residue from previous use, appropriate cleaning measures should be taken. In cases where other fluids are present from manufacturing or prior use, a complete system **flush and refill** may be necessary. Consult with the system manufacturer for guidance.

5. Filling Procedure

Always follow the **tank manufacturer's filling procedure** when adding Castrol ON Immersion Cooling Fluids to your system. The tank and system should be clean and pre-inspected to avoid contamination.

6. Regular Inspections During Operation

Operators should routinely perform visual inspections of the fluid to check for contamination or any signs of degradation:

- The fluid should appear **clear and bright** during normal operations.
- **Faint discoloration** may occur over time but can be a normal protective response against oxidation.
- **Pronounced discoloration** or **cloudiness** should be treated as a potential issue. In such cases, immediately contact your Castrol representative for advice.

7. Handling and Storage Guidelines

For detailed handling and storage procedures, always refer to **Section 4** (First Aid Measures), **Section 7** (Handling and Storage), and **Section 8** (Personal Protection) of the product's **SDS**. It is essential to store Castrol ON Immersion Cooling Fluids in appropriate conditions, free from contaminants, and at temperatures recommended in the product data sheets.

Summary Checklist

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|--------------------------|--|
| <input type="checkbox"/> | SDS and PPE are available and followed. |
| <input type="checkbox"/> | Clean and compatible transfer pumps are in use. |
| <input type="checkbox"/> | Castrol containers are inspected, clean, and product verified. |
| <input type="checkbox"/> | Immersion system is inspected for cleanliness and integrity. |
| <input type="checkbox"/> | A spill kit is available, and waste disposal procedures are identified. |
| <input type="checkbox"/> | Fluid filling and system start-up follow manufacturer guidelines. |
| <input type="checkbox"/> | Regular fluid inspections are conducted to ensure proper operation. |



For any additional information or concerns, please contact your Castrol representative or reach out via email at liquidcooling@bp.com.

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