



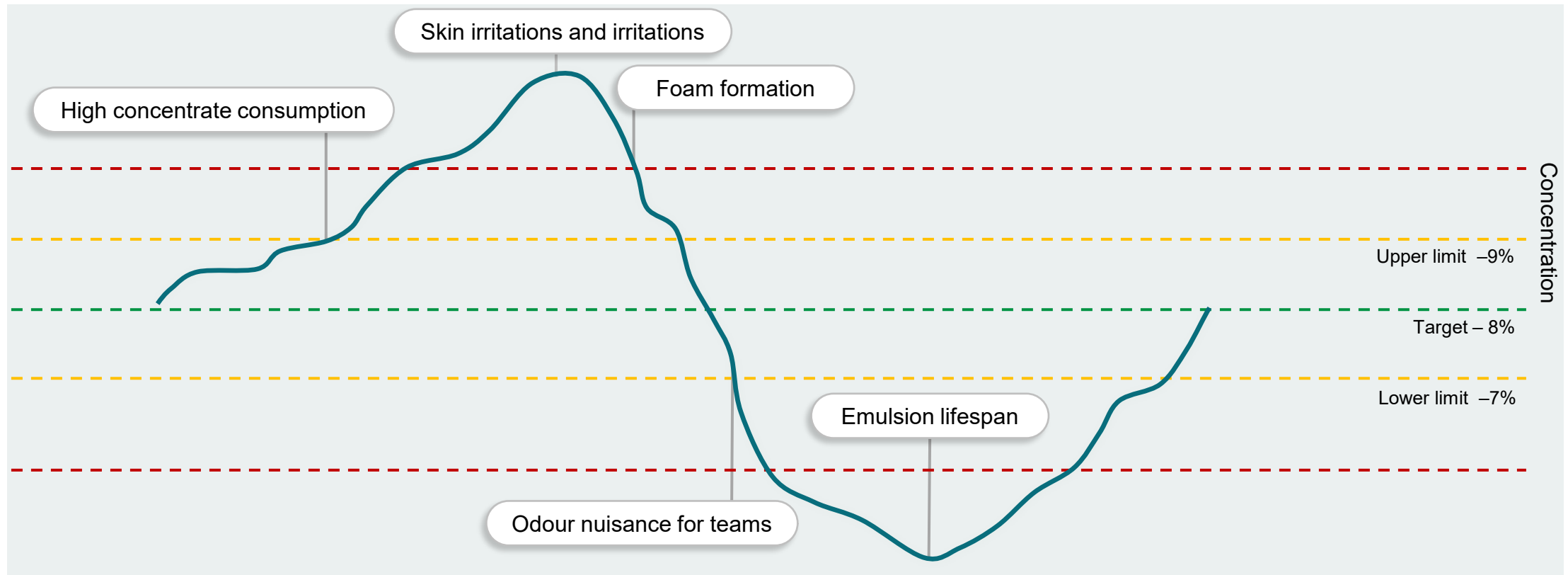
Forward

to automated coolant
management
with Castrol SmartCoolant



Manual Coolant Management

Compromises cost efficiency, quality of coolant and operator health and experience

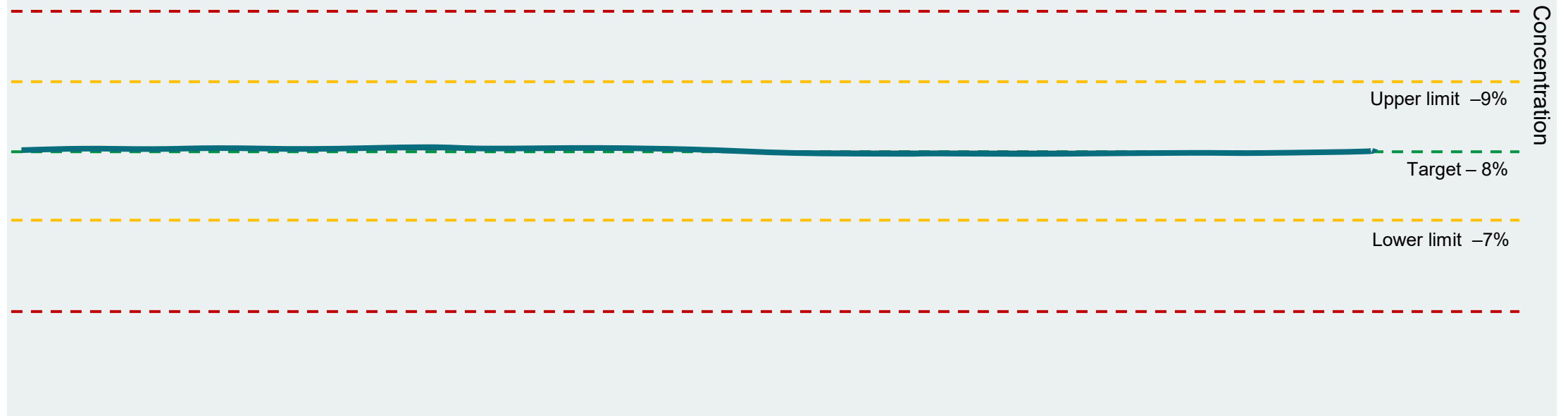


Ideal coolant Management

Drives cost efficiency, quality of coolant and operator health and experience



*Continuous monitoring and refilling creates stable coolant concentration levels.
Only achievable through automation*



Automation is a primary solution to keep Europe an Industrial powerhouse

We understand that European manufacturers are facing:



Labour Shortage



Cost Pressure



Regulatory Requirement



Quality Requirements

Move forward with Castrol Intelligent Lubrication Solutions

Whenever you have a challenge or a goal, we are here to help accelerate your success through our advanced lubricants, smart technologies and proven expert services.



Advanced lubricants

Fighting friction, corrosion and wear as the application demands, to optimize performance and efficiency, while helping extend asset and tool life

Smart technologies

By automating the collection of data, we can offer actionable insights that aid decision-making linked to lubrication maintenance. Helping cut downtime, boost productivity and unlock value



Expert services

Sharing knowledge through expert technical advice, training and dedicated onsite support to help your operations run smoothly, safely and efficiently

Move forward with Castrol Intelligent Lubrication Solutions



- Increase productivity
- Create new efficiencies
- Make smarter, more confident decisions
- Extend equipment & tool life
- Improve health and safety
- Optimise inventory management
- Achieve your circularity goals

- Lower total cost of operations
- Minimise lubricant consumption
- Cut rejected components
- Eliminate inefficiencies
- Reduce manual processes
- Lower waste and water use
- Cut unplanned maintenance costs

Castrol SmartCoolant

Our new technical services solution that offers real-time condition monitoring and automation of coolant management

Powered by a range of smart technologies, it helps customers achieve:



Automated
maintenance



Process
transparency



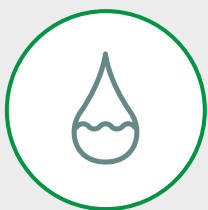
Reduced
operational costs

Supported by automated and data-driven operations



Results from Automating Coolant Management

A manufacturer has achieved up to €72,636 in annual savings across 10 machines—driven by:



Reduced concentrate consumption



Lower labour costs



Extended emulsion life



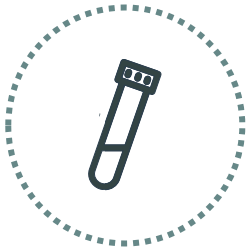
Decreased tooling expenses

Based on a milling case study approved with customer.



Engineered to Deliver Value

How SmartCoolant drives performance



Lab quality readings

SmartCoolant monitors the following key parameters

- Concentration
- pH value
- Temperature
- Conductivity
- Consumption of water and lubricants
- Stability of the measurement



Automation of coolant supply

SmartCoolant enables real-time decisions, adjusting water and concentration automatically, allowing you to focus on broader system optimisations.



Data-driven maintenance

Provides real-time data access both locally on device screens and remotely through an online portal.

- Get full access to documentation
- Receive alerts
- Set and scale quality protocols across sites

Engineered to Deliver Value

For central systems or multi-tank operations

Automate a central system with a
SmartCoolant AS 20



or

expand coverage to up to 10 machines
with the SmartCoolant ASC



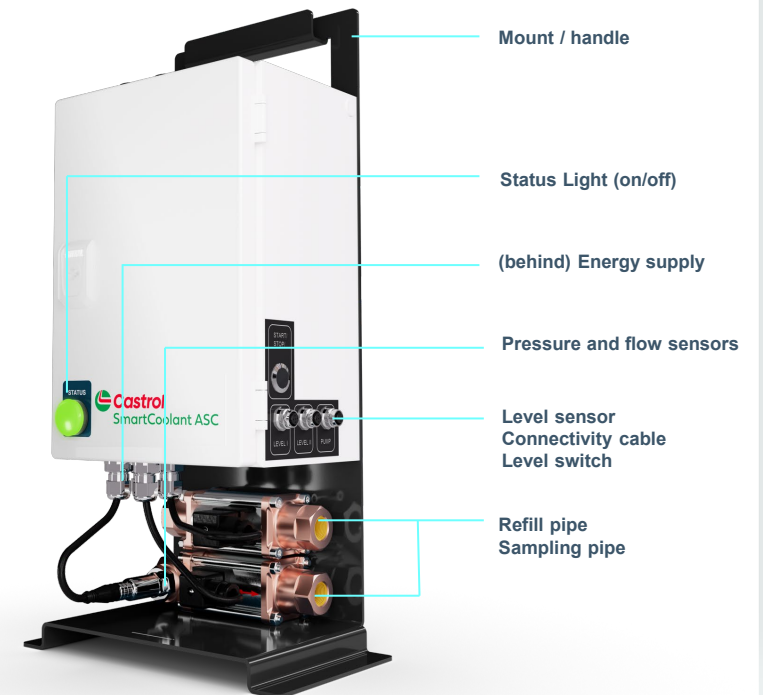
Engineered to Deliver value

Key features

SmartCoolant AS 20



SmartCoolant ASC



Coolant Management 4.0

Access your coolant data online



Status
Reports



Warning
Management



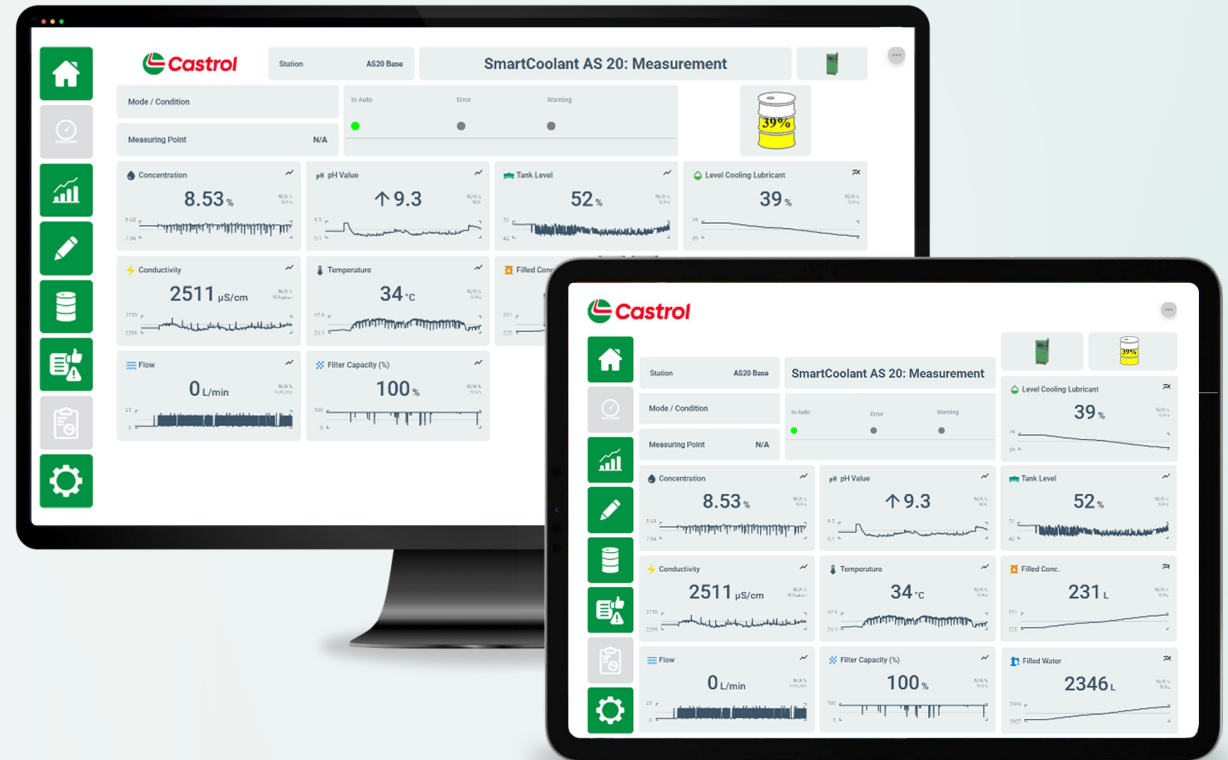
Service
Notifications

Digitisation that drives proactive performance

Get current measurements / historical data anytime via dashboard.

What's more?

- Automatic email alerts to service personnel in case of an error
- Automated report generation
- Display of water / concentrate consumption per machine
- Predictive consumption display (coolant concentrate) with procurement recommendation
- Benchmarking of individual machines against each other



Coolant Management 4.0

SmartCoolant can operate offline too

- SmartCoolant AS 20 has a display showing all measurement values, configuration of alarms and limit values directly on-site
- The data can be transferred to an external database:
 - Integration is done via internal Wi-Fi or ethernet
 - Data is transmitted using Modbus TCP
 - Display mirroring is possible via VNC Viewer



Go further with Castrol's Advanced Metalworking Products

SmartCoolant can be used with mineral oil, ester-based and synthetic-based water miscible coolants.

 **Castrol**
Alusol XBB

 **Castrol**
Hysol XBB

 **Castrol**
Syntilo

 **Castrol**
CareCut



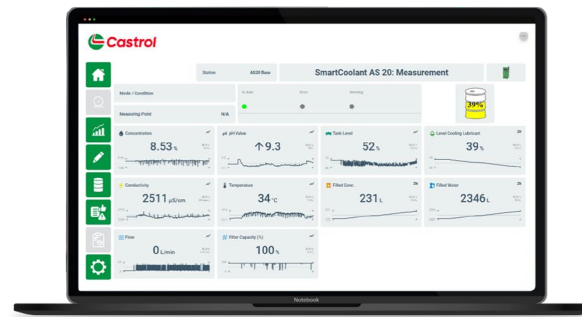
SmartCoolant Offer

Three Components of the SmartCoolant Offer:



Hardware

Sensors, controllers,
and hydraulics



Software

Cloud-hosted portal
for viewing data and
adjusting hardware
settings



Service

Advisory (operational
improvement/
optimisation), based on
the data available

SmartCoolant Offer

Key steps to the automation of coolant supply:



Value demonstration

Hardware is installed for a defined period, typically 3 to 6 months. It's monitored closely using LabCheck data to validate the solution's accuracy and effectiveness.



Commercialisation

Following successful value demonstration, next steps are decided on. They include:



Commercial deal framework (rent, lease, sale)



Service commitments/expectations



Next phase of SmartCoolant rollout



After Sales/BAU

Customers receive ongoing support for data interpretation. They can get access to spare parts and available maintenance services

SmartCoolant has integrated components to support installation at a variety of plants

Your Castrol expert will be there to support you during installation

	Additional components	Connections
SmartCoolant AS 20	Coolant dosing pump Fill level sensor for drum/IBC Suction lance for drum/IBC Filter housing and filter	Coolant concentrate supply Coolant out Water supply (for blending) Water supply (sensor cleaning) Coolant sample in
Central System	Level sensor (fill level) Level switch (emergency stop)	Ethernet
CNC	Level sensor (fill level) Level switch (emergency stop)	
SmartCoolant ASC		





Thank you





Appendix: Technical Data



Technical Data: SmartCoolant

AS 20 – 1 of X

The System is designed to operate continuously, but settings can be adjusted to suit the application

Measured Parameters	Range (values)	Calibration/Accuracy
Concentration	0-20%	±0.15 Brix
pH Value	0-14	±2.5%
Electrical Conductivity	0 – 10,000 µS	±1.5%
Temperature	0-70 C (32 – 158 F)	±1%
Flow Rate	3.2 – 22 litre/min	±2.5%
Inlet Pressure (optional)	0 – 8 bar	±1%

- Ambient temperature range: 0 - 60 C; Fluid temperature range: 10 – 40 C
- Weight: 44kg
- Ethernet and Modbus communication protocols

Installation requirements

Key to starting to a value demonstration



Requirements for Installation & Start of a Demonstration

- ½ inch male thread or M24x1.5 female thread connection to the supply line of the system's low-pressure pump (via T-piece) – system requires approx. 15 l/min; max. 8 bar
- ½ inch male thread or M24x1.5 female thread connection to the machine's water supply (according to the respective make-up water)
- Backflow preventer / check valve for drinking water supply (or for the reverse osmosis system)
- 2 x 230 V power supply via SCHUKO plug nearby – if necessary, plan for an extension cable of approx. 5 meters
- If needed, provide a drip tray or platform for placing the device (40 cm x 40 cm; load capacity >50 kg)
- 3 “tank inlets” for dosing pump return, fill level sensor & emergency stop
- Presence of a fitter and electrician during installation for minor adjustments



Start with monitoring and filling one tank; if successful, expand to additional tanks (2–3)