



technical datasheet Langelier Index

ALS Environmental are able to analyse for a range of inorganic drinking water parameters in addition to the Langelier Index. These tests will be performed at our Drinking Water "Centre of Excellence" in Wakefield, Yorkshire. The laboratory holds a breadth of UKAS and Drinking Water Testing Specification (DWTS) accredited methods which provide our customers with additional confidence in our analytical data.

The Langelier Index is an approximate measure of the saturation degree of calcium carbonate (CaCO3) in water. It is calculated using the Hydrogen Ion (pH), Alkalinity (CaCO3), Calcium concentration, Total Dissolved Solids, and water temperature of a tap water sample.

The Langelier Index (LI) is calculated as follows:

LI =pH - pHs

pHs - Saturation pH pH - pH Value

LSI	Indication
LSI<0	Water is undersaturated with respect to calcium carbonate. Undersaturated water has a tendency to remove existing calcium carbonate protective coatings in pipelines and equipment.
LSI=0	Water is considered to be neutral. Neither scale-forming nor scale removing.
LSI>0	Water is supersaturated with respect to calcium carbonate (CaCO3) and scale forming may occur.

LSI (Carrier)	Indication
-2,0<-0,5	Serious corrosion
-0,5<0	Slightly corrosion but non-scale forming
LSI = 0,0	Balanced but pitting corrosion possible
0,0<0,5	Sligthly scale forming and corrosive
0,5<2	Scale forming but non corrosive

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The Langelier Index is one of several tools used by water operators for stabilising water to control both internal corrosion and the deposition of scale. Water supply operators can optimise their water supply systems and identify leakage potentials with the Langelier Index.

Experience has shown that Langelier Index in the range of -1 to +1 has a relatively low corrosion impact on metallic components of the water supply. Langelier Index values outside this range may result in laundry stains or leaks.

Records from the DWI demonstrate that Drinking Water in England is generally considered to be 'very hard', with most areas of England exhibiting above 200 ppm for the calcium carbonate equivalent. Generally water is mostly hard in urban areas of England where soft water sources are unavailable.

Reference:

- Benefield, L., Judkins, J. & Weand, B. 1982. Process Chemistry for Water and Wastewater Treatment. Prentice--Hall, Inc. Englewood Cliffs, New Jersey.
- Metcalf & Eddy, Inc. Wastewater Engineering Treatment and Reuse, Fourth Edition









Service overview

Drinking Water

We are one of only a handful of commercial laboratories to have a dedicated Drinking Water Testing Specification (DWTS) accredited laboratory, based in Wakefield, Yorkshire. We are able to supply analysis to the Public and Private Drinking Water Regulations.

Contaminated Land

We understand the time pressures of large scale Remediation and Brownfield projects and are a member of the AGS. Our Coventry laboratory utilises state of the art analytical equipment with the backup of our sister laboratories across Europe to ensure that we deliver your projects on time every time.

Waste Management

By working closely with some of the largest companies in this sector we are able to offer unrivalled analytical and administration services to ensure that your samples are processed swiftly and in line with the UKAS Deviating Sample Guidance.

Legionella and Microbiology

Being members of the Legionella Control Association (LCA) we understand the emphasis placed on laboratory analysis for the Control of Legionella. With 3 methods for testing Legionella (including rapid PCR) and an understanding and appreciation the implications of ACoP L8, HSG 274 and HTM04-01 we are your ideal analytical partner for all of your water hygiene monitoring requirements.

Quality

Providing customers with UKAS ISO 17025:2005, MCERTS and DWTS accredited data from our laboratories across the UK. We participate in a broad range of Proficiency Testing schemes and hold a DEFRA import licence for soils.

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Did you know that?

We are able to provide a broad range of additional services to help with your sampling including:

- Internal refrigerated and tracked courier network
- National portfolio of drop-off locations
- Pre-Registration of samples via our "Pre-Reg" system
- Dedicated customer service advisor
- Online reporting via our WebTrieve system





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