

Water Analysis

Green Chemistry



Green and chemistry: can that work? Interview with Cay-Peter Voss

We interviewed the owner and CEO
of the Tintometer Group in his office
in Dortmund.



 *Hello, Mr Voss.
Green and chemistry: isn't that a contradiction
in terms?*

C.-P. Voss: No, it's definitely not a contradiction. Green chemistry is an issue that experts in the field have been discussing for well over a decade. It refers to the industry's efforts to produce its products in a way that is as environmentally friendly as possible and conserves resources wherever possible. To be specific, for us, it's about avoiding hazardous substances and sustainability. As a German company with a close relationship to our customers and people generally, for us Green Chemistry is an idea that we are especially committed to.

For example, since 2010 we have, wherever possible, systematically avoided using boric acid in our DPD tablets and other tablet products.

 *Why have you avoided boric acid?*

C.-P. Voss: It goes back to EU substance testing and regulation. Boric acid was classified as a so-called 'substance of very high concern' by the European Chemicals Agency, ECHA. This means that the substance is not only generally labelled as hazardous, but at the same time, the classification also means that industry should avoid using it.

 *Perhaps you can explain for us briefly:
why is using boric acid such a problem?*

C.-P. Voss: Among other things, boric acid can have adverse effects on the ability to reproduce!

If we look around the market, then we will find many competitors' products that still contain boric acid. Consumers are still uninformed about this issue and are (unknowingly) exposing themselves to a risk. This is why we want to create transparency with the Green Chemistry logo and educate consumers: it enables customers to compare products and decide whether they want to avoid boric acid, for example.

Or, to put it another way, why should customers use a product containing hazardous substances when hazard-free alternatives are available at no extra costs?

 *Is avoiding boric acid the only step you are
taking with your Green Chemistry initiative?*

C.-P. Voss Voss: No. We're constantly improving the formulations of Lovibond® reagents and test kits in response to new findings. A large number of our reagents were improved for this reason in 2016 alone. And we will continue to systematically move forwards in this direction.

 *Does the composition of reagents influence the
quality of the measurement results?*

C.-P. Voss: That's an important question. Very rigorous quality criteria apply to Lovibond® products. That means that for every new test developed and every reagent offered for sale all the requirements of the current measurement must be fulfilled – without any exceptions. The fact that we research, develop and manufacture in Germany really pays dividends here. It gives us access to decades of experience and excellent specialists. We don't put any new test on the market without extensive approval and verification processes.

Around 10% of our employees, that is more than 40 colleagues, work in research and development. You won't find that anywhere else in our industry!

Our customers can therefore be sure that all Green Chemistry reagents offer the same excellent measurement performance. They don't have to accept any reduction in measurement quality.

 *Do all the companies on the market take the
same approach? Or do your competitors have
other strategies?*

C.-P. Voss: Some of our competitors' DPD tablets still contain boric acid. But we can only speculate as to why that is. The fact is that the change process takes a lot of expertise, time and money. After all, you don't want to lose the special benefits of reagent tablets: their exceptionally long shelf life of 5-10 years and precise dosing accuracy.

What's more, DPD tablets must not lose the ability to buffer different pH values in the test. ISO 7393-2 is critical here, too. It makes the unique quality and performance of Lovibond® DPD tablets especially clear when compared to competitors' products.



So, if we've understood correctly, the Green Chemistry concept describes reagents that contain fewer hazardous and toxic substances but maintain the same analytical performance? So this idea only has benefits to it?

C.-P. Voss: That's right!

I also still can't understand why some distributors and customers continue to sell or use orthotolidine (OTO) to detect chlorine – and for domestic use, of all places. It has been demonstrated that OTO is carcinogenic, so it is classified as toxic, poisonous.

What's more, OTO only determines total chlorine and not the active free chlorine, as is required. And price is no longer an issue today. So why should our customers be exposed to a health hazard for no reason and completely unnecessarily, especially when there's a real alternative with Lovibond® DPD Green Chemistry? This is also one of the principles of the law of substitution, which states that where a safer and better alternative exists, then the more hazardous product should be discontinued. So there is no valid reason to continue to use OTO.

How exactly does Tintometer plan to ensure that this issue becomes front of mind for customers?

C.-P. Voss Voss: Our first step in communicating this message is our Green Chemistry logo. Users and consumers can then see at a glance which of our products already fulfil the requirements of this concept. We also hope that our customers who use our reagents in their own products will respond positively to the logo, and ideally, we hope that they will adopt it. We'd be delighted if, in this way, these products were able to communicate the benefits of green chemistry to end consumers, too.

We will also regularly publish further information on this topic. We can reach our customers via our website and our newsletter, and interested audiences via these two channels with broad reach.

Thank you for talking to us.



Do you have any questions about green chemistry?
Would you like to use the Green Chemistry logo on your products?
Then please contact us by email or telephone:

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Follow the green ribbon on Lovibond® reagents. The Erlenmeyer flask with the leaf in the green Green Chemistry logo is more than a promise:

For all tablets, powder and liquid reagents, it is our claim, formulations to be particularly environmentally compatible. Hazardous substances are – if possible – are replaced by non-hazardous and functionally equivalent substitutes.

Where this is not possible due to the required chemistry of the detection reaction, their concentration is reduced to the minimum necessary. And this is done without compromising the quality of the analysis results.

For example, all reagents offered for the pool sector are free of boric acid, which is often used as an auxiliary substance throughout the industry.

Boric acid is classified by the EU as harmful to reproductive ability.

However, the Lovibond® DPD No.1 tablet is not only 100 % free of boric acid, it also guarantees the sufficient buffering effect prescribed by the standard. With these properties it therefore occupies the top position in the competition.

By the way, our Green Chemistry has been awarded for its innovation.



Reagent	Quantity	Order Code
Copper No.1	100	513550BT
	250	513551BT
CyA-Test	100	511370BT
	250	511371BT
CyA HR-Test	100	511430BT
	250	511431BT
DPD No.1	100	511050BT
	250	511051BT
	500	511052BT
DPD No.3	100	511080BT
	250	511081BT
	500	511082BT
DPD No.4	100	511220BT
	250	511221BT
	500	511222BT
DPD No.1 HR	100	511500BT
	250	511501BT
	500	511502BT
DPD No.3 HR	100	511590BT
	250	511591BT
	500	511592BT
DPD No.1 Rapid	100	511310BT
	250	511311BT
	500	511312BT
DPD No.3 Rapid	100	511290BT
	250	511291BT
	500	511292BT
DPD No.4 Rapid	100	511570BT
	250	511571BT
	500	511572BT
DPD No.1 High Calcium	100	515740BT
	250	515741BT
	500	515742BT
DPD No.3 High Calcium	100	515730BT
	250	515731BT
	500	515732BT
DPD No.1 Nessleriser	100	511230BT
	250	511231BT
DPD No.2 Nessleriser	100	511240
	250	511241
DPD No.3 Nessleriser	100	511250BT
	250	511251BT
DPD No.4 Nessleriser	100	511260BT
	250	511261BT
Phenol Red	100	511750BT
	250	511751BT
	500	511752BT
Phenol Red Rapid	100	511790BT
	250	511791BT
	500	511792BT
VARIO Chlorine Free DPD F5	100	530090
	1000	530093
VARIO Chlorine Total DPD F5	100	530080
	1000	530083
VARIO Chlorine Free DPD F10	100	530180
	1000	530183
VARIO Chlorine Total DPD F10	100	530190
	1000	530193
VARIO Chlorine Free DPD F25	100	530110
	1000	530113
VARIO Chlorine Total DPD F25	100	530130
	1000	530133