

READY TO USE KIT FOR ACUTE TOXICITY

We created a kit for Easychem TOX Laboratory.
The kit was developed, tested and validated by our application laboratory to guarantee the perfect stability and reproducibility of toxicity assays.
Each kit includes:

- Rehydration buffer
- Reagent A (set of lyophilized bacteria vials)
- Osmotic test buffer

Positive controls: Zinc or other standard depending on the strain



Technical Data

Technology	DAMTA* *Device for Analytical Monitoring and Toxicity Assessment
Detector & Reading	High sensitivity Luminometer - Direct reading
Reaction microcuvettes	80, reusable after washing and background check
Reaction plate temperature	15 to 25 °C adjustable, accuracy: + / - 0.1 °C
Sample capacity	Up to 80 sample tubes on board
Sample/Reagents/Waste Level sensors	Yes
Sample/Ambient temperature	Sample: 5 to 35 °C; Ambient: 5 to 28 °C; Relative Humidity at 28°C <40%
Power supply	110/230 Vac, 50/60 Hz
Power consumption	400 W
Dimensions/Weight	62.5 (H) x 89 (W) x 52 (D) cm / 50 Kg w/o reagents
PC and Software	External PC, dedicated software
Reagents	Freeze-dried bacteria vials: manual rehydration and use Assay buffers & Positive controls: ready to use
Refrigerated reagent tray	Yes, standard
Calibration interval	Positive control check - programmable
Reagent validity	Rehydrated bacteria: 2-5 days depending on the strain Buffers and Controls: 6 months
Sampling frequency	30 sample/hour – with fast simil ISO method 20 sample/hour – with full ISO method
Incubation time	Programmable
Analysis time to final result	From 2 up to 15/30 minutes – with fast simil ISO From 15 up to 30/45 minutes – with full ISO
Real time calculation	Real time calculation of all parameters required by UNI EN ISO 11348-3 and GB-T 15441
Blanks (Validation for false negatives & positives)	Programmable up to one blank per each sample
Sample replicate & Positive control (Validation for false positives)	Programmable after any toxicity warning The analyzer runs a new sample with up to 20 dilutions, a positive control, and calculates EC50 in case of toxicity higher than a predefined threshold

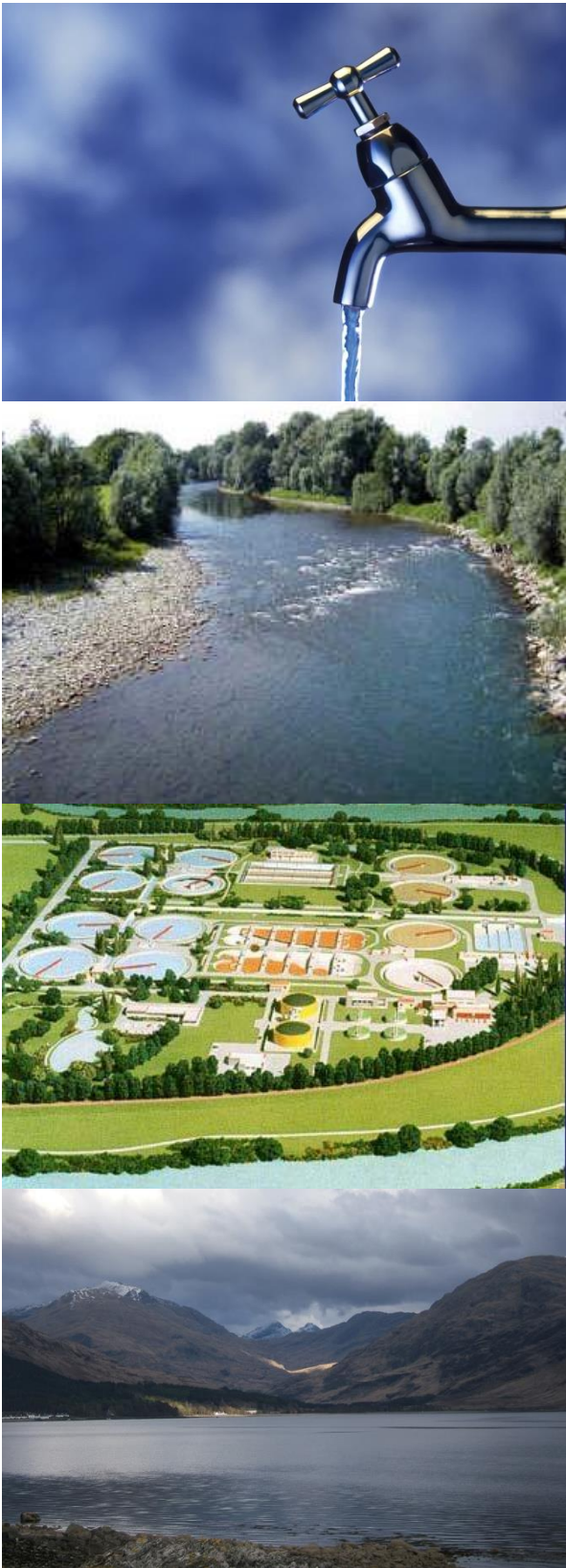
* PATENTED

Subject to change without notice

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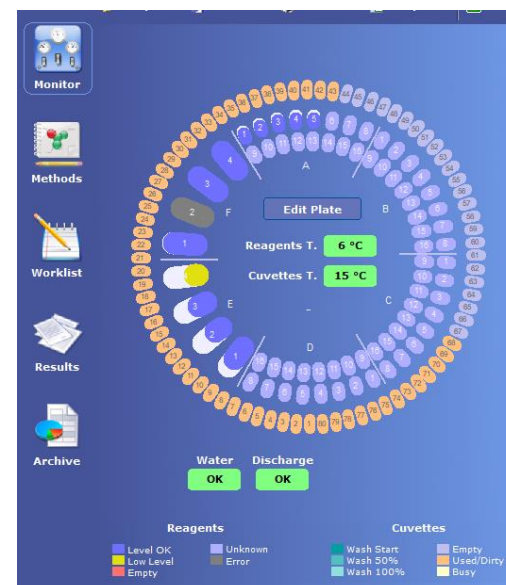
EASYCHEM TOX LABORATORY

DIRECT READING
DISCRETE ANALYZER FOR
AUTOMATED DETERMINATION
OF ACUTE TOXICITY IN WATER

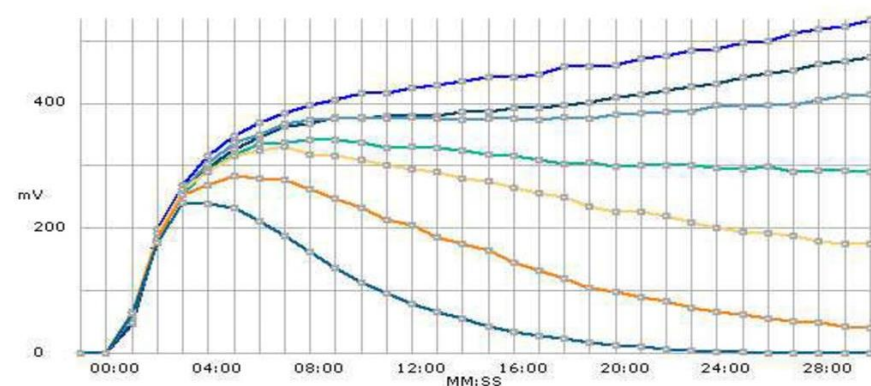


SOFTWARE AND SAMPLE ANALYSIS

- Up to 20 different dilutions programmable per sample.
- All measurements of blanks and samples at the different dilutions performed in duplicate.
- Possibility to switch between fast simil ISO method and full ISO method
- Real time calculation of all parameters required by UNI EN ISO 11348-3 and GB/T 1995
- Inhibition of light emission every minute.
- Deviation from mean of blank duplicates.
- Deviation from mean of parallel determinations of sample inhibition values.
- Stability of blank curves.
- Graph showing kinetic curves representing light emission measurements of blank and samples. All measurements values enclosed in a table.
- Graph showing kinetic curves representing mean light emission measurements of blank and sample duplicates. All mean measurements values enclosed in a table.
- Graph showing kinetic curves representing mean light emission inhibition measurements of sample duplicates.



	Average	Deviation %	Inhibition 5' %	Inhibition 15' %	Final Inhibition %
Blank	533.4	4.3			
1/50	473.6	0.7	6.3	12.3	11.2
1/30	413.8	2.5	3.2	14.8	22.4
1/20	290.5	2.7	8.8	28.0	45.5
1/15	174.0	0.3	9.5	37.4	67.4
1/10	40.9	0.8	18.2	62.7	92.3
1/5	0.0	0.0	33.0	90.4	100.0
EC20			12.46	3.53	2.90
			10.89-14.03	1.27-5.80	0.01-6.01
EC50			47.23	7.36	4.76
			43.93-50.53	5.42-9.29	2.40-7.13
TU			2.1	13.6	21
					R2: 0.980



EASYCHEM TOX LABORATORY ANALYZER FOR ACUTE TOXICITY DETERMINATION IN WATER



Easychem TOX Laboratory, the result of years of intensive R&D activity based on patented DAMTA* analytical technology, is an original direct reading analyzer for fully automated high through put acute toxicity measurements of water samples using live cultures of luminescent bacteria.

EASYCHEM TOX Laboratory discrete automated analyzer includes:

- Refrigerated compartment for lyophilized bacteria, reagents, buffers and controls
- Mechanical arm to allow aspiration, transfer and dispensing of reagents and samples
- Reaction plate, temperature controlled with n. 80 reaction cuvettes
- Cuvette wash station and background check before reuse
- Integrated high sensitivity luminometer

Samples, conditioning buffer and bacteria are transferred through a high precision microsyringe inside the reaction cuvette, where luminescence emission is constantly monitored; toxicity events can be identified within 60 sec from sampling.

■ LUMINESCENT BACTERIA

- Proprietary bioluminescent bacteria have been selected, grown, stabilized and lyophilized according to standard methods
- Rehydrated cultures last up to 2-5 days
- High sensitivity to different types of reference compounds defined in ISO and GB-T standards, such as DCP, zinc sulfate and mercury chloride
- Up to 80 samples tubes on board for more than 5 hours of unattended run

■ UNATTENDED TOXICITY MEASUREMENTS

- Programmable quality control, limits and parameters.
- Toxicity alert within 60 seconds from sampling
- Real time toxicity trend continuously monitored from 1 up to 15 / 30 minutes from sampling
- Programmable measurement of blanks and positive controls to validate results
- During result validation, sample runs are not interrupted.

■ SAMPLE FILTRATION

In case of high turbidity samples, 0.45 µm filtration, recommended.