



Metalworking Process Overview

Material

Coolants/lubricants

Cleaning solutions

Rust inhibitors

Products

Dilution control

Contamination monitor

Dilution control

Contamination monitor

Dilution control

ATAGO provides a simple solution to all aspects of metalworking fluid management.

Cutting oils



PAL-102S

Cat.No.4502

Scale : Cutting Oil
 RNG : 0.0 to 70.0 (ATC)
 RES : 0.1, 0.1°C
 ACC : ±0.2, ±1°C
 TMP : 10 to 75°C

Water-soluble cleaning fluids



PAL-Cleaner

Cat.No.4536

Scale : Cleaner
 RNG : 0.00 to 25.00(ATC)
 RES : 0.01, 0.1°C
 ACC : ±0.10, ±1°C
 TMP : 10 to 100°C

Water-insoluble cleaning fluids



PAL-2

Cat.No.3820

Scale : Brix
 RNG : 45.0 to 93.0% (ATC)
 RES : 0.1%, 0.1°C
 ACC : ±0.2%, ±1°C
 TMP : 10 to 100°C



PAL-α

Cat.No.3840

Scale : Brix
 RNG : 0.0 to 85.0% (ATC)
 RES : 0.1%, 0.1°C
 ACC : ±0.2%, ±1°C
 TMP : 10 to 100°C

Anti rust agents



PAL-AntiRust

Cat.No.4537

Scale : AntiRust
 RNG : 0.00 to 25.00(ATC)
 RES : 0.01, 0.1°C
 ACC : ±0.10, ±1°C
 TMP : 10 to 100°C

Common Specifications

Ambient Temperature	10 to 40°C
Power Supply	2 × AAA Batteries
Battery life	Approx. 11,000 measurements (when using alkaline batteries)
International Protection Class	IP65 Dust-tight and Protected against water jets.
Dimensions and Weight	55(W)×31(D)×109(H)mm, 100g (Main Unit only)

*ATC=Automatic Temperature Compensation
 PAL-101S, PAL-Cleaner, and PAL-AntiRust display in Brix, a general concentration indicator for any aqueous solutions.

OFF SET function OFF SET function: A conversion factor and/or a number to add/subtract may be programmed to align the PAL readings with titration methods.

In addition to the above models, ATAGO provides other models that can measure the concentration of metalworking fluids. ATAGO also offers a lineup of In-line products. For details, please contact:

<http://www.atago.net/> overseas@atago.net

Reference

RNG	Measurement Range
RES	Resolution
ACC	Measurement Accuracy
TMP	Temperature compensation range

Measurement Method



Place the sample onto the prism surface.



Press the START key.



The measurement value will be displayed in 3 seconds.

Controlling the concentration of metalworking fluids

Why choose ATAGO refractometers?

Easy operation with just two keys.
No need to read instructions.

Clearly display when fluids should be replaced or refilled, so you do not waste them. Cost saving!

By using fluids with the proper concentration, equipment problems can be prevented. It prolongs the durability of devices.

No more errors and bothersome measuring of titration.

Proper concentration guarantees a good finish and good quality of products.

Proper concentration prevents metalworking fluids from decomposition and deterioration.

Easy care and maintenance! Just wiping with cloth keeps the meter clean. Can be washed under running water.

Electrodes of pH meters and conductivity meters are sensitive and generally require handling with care. But the prism of ATAGO refractometer is robust.

Proper concentration promises safety and security of personnel.

All ATAGO refractometers are designed and manufactured in Japan.



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HACCP GMP GLP

ATAGO products comply with HACCP, GMP, and GLP system standards.

*Specifications and appearance are subject to change without notice.



ISO9001