

Machine cleaning of Mixing containers and machine parts

1. preparation of the cleaning solution:

The INARCO® products are supplied as high concentrates (water-free) → small storage area, high storage stability.
For use, the products are mixed (depending on the application) e.g. 1:3 with water:

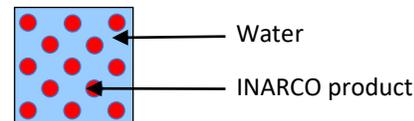


INARCO product
High concentrate



INARCO product
e.g. 1:3 in water

Schematic:



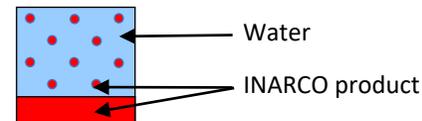
2. settling behavior of the cleaning solution:

Depending on the mixing ratio and the INARCO® product, phase separation occurs in the resting state and the cleaning solution partially segregates. In order to ensure an optimum cleaning result, it is necessary to restore the "homogeneity" by stirring before use, or the entire cleaning solution must be pumped into the machine:



INARCO product e.g. 1:3 in water
after 5-10 min standing time

Schematic:



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3. cleaning sequence in the machine:

Depending on the paint/ink/adhesive/resin, the parameters of the cleaning system must be set. According to Sinner's circle one parameter can be partially balanced with one of the other 3 to achieve an optimum result:



The cleaning result always depends on 4 factors:

Chemistry: Composition and concentration of the cleaning product

Mechanics: Type of mechanics such as ultrasound (cavitation), pressure (spray nozzle pressure and arrangement), brushes (type and positioning), circulation movement of cleaning solution by pump (strength of bath movement).

Temperature: the higher the temperature, the better

Time the longer the exposure time, the better

Depending on the possibilities on site, one parameter can thus be balanced with another within the 4 parameters.

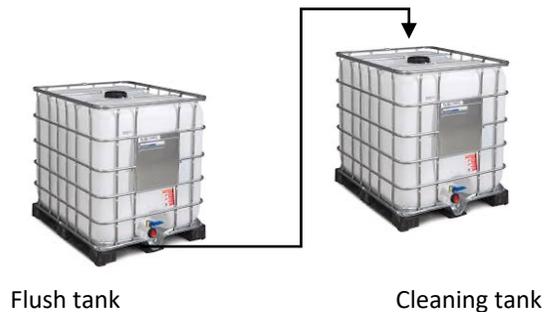
When setting the parameters, INARCO® -Chemie is happy to provide support at any time with advice and the transfer of know-how, on site, by telephone or by video conference.

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4. return of the cleaning solution into the cleaning tank:

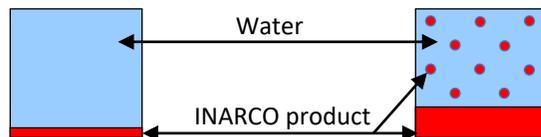
After the cleaning process, the used cleaning solution is pumped back from the machine into the cleaning tank. Depending on the size of the system, surface condition of the metal (notches, corners, grooves) and dilution of the cleaning solution there is a loss of cleaning solution, which is visible after several cleaning cycles in the cleaning tank. This loss is normal and, in the case of solvents or alkaline systems, is compensated for by refilling the respective product.

The loss in the cleaning tank is in the rinsing tank for alkaline systems as well as for INARCO® products, for solvents, this portion evaporates and is distributed in the environment. In the rinsing tank, the rinsing water of the alkaline products must be disposed of as hazardous material.



With INARCO® products, the "loss" in the rinsing tank is pumped back into the cleaning tank and is therefore not a loss. The difference to alkaline systems is that this loss - according to the settling behavior of the INARCO® products - settles at the bottom of the rinsing tank and can thus also be pumped back from the bottom. The INARCO® products thus offer optimum utilization of their cleaning performance.

Schematic:



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5. consumption of INARCO® products:

In many cases, INARCO® products do not completely dissolve adhesives/varnish/resin/paint, but dissolve them from the surface to be cleaned = lower consumption of cleaner.

surface to be cleaned = lower consumption of the cleaner. The result is mostly shreds that settle on the floor without further aids such as flocculants or which are already filtered out by the sieve of the cleaning system.

The consumption of the products depends on the material to be stripped and the quantity. Experience has shown that the INARCO® products have approx. twice the running performance (bath life) than solvents or highly alkaline products.

Examples of how INARCO® products remove cured two-component soiling:



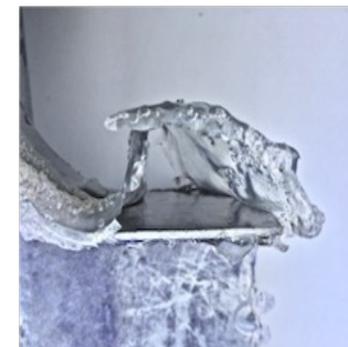
2K laminating
adhesive



2K color lacquer



2K lacquer



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6. disposal of INARCO® products:

In the used cleaning solution in the cleaning tank - according to the settling behavior - after a certain standing time paint/lacquer/adhesives/resins will settle to the bottom. Additional flocculants are not necessary. The standing time depends on the material removed and varies from case to case (from a few minutes to a couple of hours or overnight).

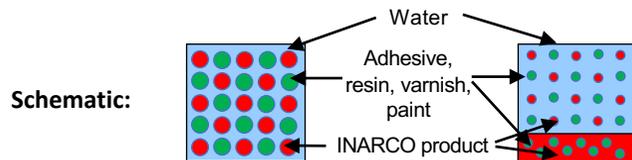


INARCO product
directly after cleaning



INARCO product
after 5-10min standing
time

After cleaning, it is desired that most of the detached adhesives/resins/varnish/paint settle to the bottom. This can take a few minutes or even several hours, depending on the composition and volume. The upper part of the working solution is thus mostly clean and can be permanently reused. Only in the event of a drop in performance is "re-sharpened" with INARCO product = low disposal costs.



Example of the settling behavior of INARCO® products:

After approx. 30 min, the varnish and the mica components are completely deposited on the bottom and the upper part is practically clean. Due to the reusable cleaning solution, product is not unnecessarily disposed of, but optimally used.



Metallic car paint diluted 1:3 in an INARCO cleaning solution.

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6. disposal of INARCO® products:

In order to dispose of as little of the INARCO® product as possible, it is important to correctly define the actual part to be disposed of:



Cleaning solution
after 5-10min standing
time



Casting of the reusable
upper part

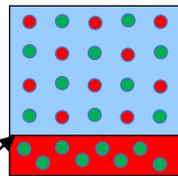


cast off reusable upper
part

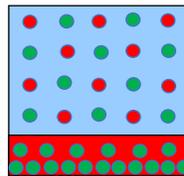


to be disposed of
Residual sludge

Schematic:



usually the part to be disposed of is
misinterpreted - not everything that is
stained has to be disposed of



on close inspection, only the really thick sludge
at the bottom should be disposed of -
otherwise too much of the INARCO product will
be disposed of as well

Alternatively, instead of draining the
upper part, the lower part (sludge) can
also be drained, e.g. via an outlet tap on
the IBC.

In the end, the disposal is NOT of the CLEANING TANK NOR the FLUSH TANK but ONLY of the RESIDUAL SLUDGE !!!!

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7. assistance for the efficient disposal of INARCO® products:

In the beginning, it is somewhat difficult to properly define the actual "sludge" to be disposed of. Therefore, for the initial period, we recommend an aid to familiarize yourself with the correct definition. Those who have been working with the INARCO® products for a longer period of time can skip this step.



to be disposed of
Quantity after casting
according to frequent
customer interpretation



Add double the amount of
water (= water column), stir
well and let stand.



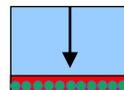
New "sludge" definition to be disposed of.



Schematic:



frequent customer interpretation -
leads to the disposal of a large part
of the INARCO product



Fill up with additionally
double the amount of
water = water column

the "new" quantity to be
disposed of is now more
clearly visible = optimum
utilization

The amount to be disposed of is often evaluated according to the coloring, which often results in much of the INARCO product being disposed of as well. The residue after draining is best infused with about twice the amount of water, stirred and allowed to settle. This (water column) makes the actual "sludge" to be disposed of more clearly visible.

Example of the cleaning result in a cleaning plant for 1t mixing tanks:

Mixing tank before cleaning



Mixing tank after cleaning



Parameters:

1 cleaning cycle: 15min at 70°C

1 rinse cycle: 10min cold

CONCLUSIONS:

With the INARCO® products it is not only possible to replace harmful and dangerous cleanings like with solvents or highly alkaline products, but also to work cost-efficiently.

In addition to high cleaning performance, INARCO® products offer very high occupational and environmental safety and high cost savings due to permanent reusability and extremely low disposal volume.

The INARCO® products are both ecological and economical and therefore forward-looking!

INARCO-Chemie is committed to sustainability!