

riag Oberflächentechnik AG · Postfach 169 · CH-9545 Wängi TG

21.12.2021

riag Act 653

Pickling for aluminium alloys or matt pickling for copper and its alloys

riag Act 653 is used for low alloy or copper alloyed aluminium. The alloy compounds are removed efficiently without attacking the base material. The carrying capacity of copper particularly is very well.

riag Act 653 is used for matting for copper and its alloys (especially brass). The attack on the workpiece is regular. The ideal concentration and treatment time can be determined by preliminary tests. As a result, a time-consuming mechanical treatment can often be eliminated.

riag Act 653 Salt doesn't contain any nitrate, chloride or fluoride. The sulphuric acid serves as a stabiliser.

Make up of aluminium pickling solution

	Range	
riag Act 653 Salt	50 - 150	g/L
Sulphuric acid 96 %	20	mL/L
Immersion time	10 - 60	S

Make up of matt pickling for copper and its alloys

	Range	
riag Act 653 Salt	25 – 75	g/L
Sulphuric acid 96 %	20 - 60	mL/L
riag Tenside*	0- 2	mL/L
Immersion time	120 – 480	S

riag Tenside* If necessary, a surfactant can be used

Mixed use of the two applications above is not recommended. It is essential that the parts immersed in the process solutions are free of grease and oil.

Make up

The tank is filled at $^{2}/_{3}$ with DI-water and the calculated amount of sulphuric acid 96 % is carefully added. We recommend wearing safety glasses, gloves and protective clothing while working with concentrated sulphuric acid. Finally add the **riag Act 653 Salt** and stir until dissolved. If necessary top up to the working level, the solution is ready to use.

Operating parameters

Temperature	18 – 25 °C
Treating time	10 – 500 s
Agitation	Recommended
Tanks	Plastic or lined steel
Fume extraction	Recommended

Maintenance

riag Act 653 should be analysed and if necessary corrected.

Specification

At 20 °C riag Act 653 Salt

appearance white powder

Environmental considerations

All concentrates, rinse waters and waste solution must be treated and discharged in accordance with local effluent control regulations. It is possible to alkalise the solution with caustic soda or chalk. Attention: persulphate may react like hydrogen peroxide due to the possibility of splitting off oxygen. Do not mix the solution with hydrochloric acid or high concentrated chloride solutions due to the possibility of creation of chlorine.

Further information can be gleaned from the MSDS.

Liability

This instruction manual was compiled with reference to the state of the art and all current standards, and is based on the long-term knowledge and experience of riag. However, riag cannot monitor compliance with this instruction manual and the methods described herein at the customer/end-user's premises. Work carried out with riag products must be adapted accordingly to meet local conditions. In particular, riag cannot accept liability for damage, loss or cost incurred due to a failure to adhere to this instruction manual, improper application of the methods, unauthorised technical modifications, insufficient maintenance or the absence of maintenance in respect of the requisite technical hardware or equipment, or in the event of use by unqualified personnel. riag is not liable for damage or loss caused by riag or its employees except where intention or gross negligence can be proved. riag furthermore reserves the right to make changes in relation to products, methods and the instruction manual without prior notice.

Our goods and services are subject to the General Terms and Conditions for Delivery of the Association of Surface Technology Suppliers (VLO), which can be viewed at <u>www.riag.ch</u> (link "terms and conditions", document "General Terms and Conditions for Delivery", version 3/2018), which we gladly send you on request.

This transaction is governed by material Swiss law (Law of Obligations), excluding private international law (conflict of laws) and intergovernmental treaties, specifically the CISG. riag Oberflächentechnik AG Murgstrasse 19a CH-9545 Wängi T +41 (0)52 369 70 70 F +41 (0)52 369 70 79 riag.ch info@riag.ch

Analysis (Analytical methods)

Sample preparation: The sample must be taken from a well-mixed location and allowed to cool down to 25 °C.

Calculation	g/L riag Act (653 Salt = consumption of sodium thiosulphate mL $\times 3.22$	
	Some mL	slightly yellowish, then add starch solution and titrate until the blue colour disappears.	
		0.1 mol/L sodium thiosulphate until the solution is only	
	10 mL	Potassium iodide solution, titrate with	
	2 mL	Sulphuric acid, add	
	100 mL	DI water, then add	
	250 mL	beaker, add	
	5 mL	passivation bath into a	
Process		Pipette	
	1 % starch so	blution (freshly prepared)	
	0.1 mol/L sod	dium thiosulphate	
	10 % potassium iodide		
Reagents	10 % sulphuric acid		