

REFERENCE LIST

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Treatment of Wastewater

Metal Finishing Industry
Aerospace & Transport



Client	Plant Type	Capacity
GE Caledonian Prestwick, UK	<p>Treatment of wastewater from metal finishing Twin stream system for</p> <p>a. Metal-containing wastewater: Initial transfer tank & transfer pumps Incoming Balance tank & transfer pumps Chromium reduction, pH correction, Flocculation Lamella tube Settler. Sludge collection and filter press Automatic pH probe cleaning system Dosing systems for H₂SO₄, NaHSO₃, & NaOH & polyelectrolyte</p> <p>b. Non-metal-containing wastewater Initial transfer tank & transfer pumps Incoming Balance tank & transfer pumps pH correction system Discharge pH, Temperature & Flow monitoring</p>	6 - 28m ³ /h
GE Aviation Hamble, UK	<p>Treatment of wastewater from metal finishing Replacement of plant supplied previously in 1994 due to factory expansion Automatic transfer systems in various remote production shops, including inter-connecting dual containment pipework and remote status communication, inter-locking & alarms Incoming Balance tank for Chrome-containing wastewater & transfer pumps Chromium reduction, pH correction, separate pH correction for Tartaric acid, Flocculation Lamella tube Settler. Sludge collection and filter press Automatic pH probe cleaning system Discharge pH, Turbidity & Flow monitoring Dual-IBC-based dosing systems for H₂SO₄, NaHSO₃, & NaOH, with auto-changeover Separate dosing systems for Ca(OH)₂ & polyelectrolyte Alarm transmission to Security and various personnel, via both text and email.</p>	20m ³ /h
Chromalloy, Somercotes, UK	<p>Treatment of wastewater from metal finishing, including component stripping and platinum plating. Includes both rinse water and spent process solutions Ammonia treatment, pH correction, Flocculation. Lamella tube Settler. Alkali dumps tank & bleed system Sludge collection and filter press Discharge Flow monitoring</p>	5m ³ /h
Herr Voss, for Egypt	<p>Water and wastewater treatment for cleaning of aluminium strip Largely pre-assembled and tested plant, comprising:</p> <p>Deionised Water supply system Activated Carbon Softener / Reverse Osmosis and mixed bed polishing system</p> <p>Wastewater Treatment Plant Acidification & Oil flotation pH correction, Flocculation, Lamella Tube Settler Sludge collection and filter press Discharge Flow monitoring</p>	4m ³ /h 2.5m ³ /h

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Gestamp Tallent Cannock, UK	Treatment of wastewater from metal finishing pH correction, flocculation, Lamella Tube Settler Alkali dumps tank & bleed system Sludge collection and filter press IBC-based dosing systems for H ₂ SO ₄ and NaOH Emulsion –based dilution and dosing system for polymer	10 m ³ /h
	Deionised Water supply system Softener / Reverse Osmosis system	4.8 m ³ /h
	Interconnecting pipework Between process (cleaning and paint) line and wastewater treatment plant. Includes both single and dual containment systems for wastewater and production chemicals etc.	
GE Aerospace Hamble, UK	Treatment of wastewater from metal finishing Extension of existing plant (from 1994) for treatment of tartaric acid from anodising	5 m ³ /h
Ray Owen Plating Telford, UK	Special Ion Exchange system for removal of Iron & Zinc contaminants from Trivalent Chromium Passivate solution Skid-mounted system including Backwash liquor make-up & recovery & Regeneration system	3 m ³ /h
Otelinox Targoviste, Romania	Bulk chemical storage and dosing systems for 70% HF and 60% HNO₃	
Jaguar Cars Ltd, Halewood, UK	Rinse Water and Process Dumps collection systems for Acid, Alkali and Paint wastes. Paint coagulation, Neutralisation, Flocculation,, two lamella tube settlers, Final discharge monitoring Sludge thickener, sludge filter press & filtrate recycling Bulk chemical storage & dosing for FeCl ₃ , HCl & NaOH, incl. HCl scrubber. Additional dosing systems for polyelectrolyte & antifoam Floor spillage systems Full integrated control system with SCADA	(3 x 150m ³ and 3 x 120m ³) ≤75m ³ /h
ProWaTech AG Embrach, Switzerland	Treatment of wastewater from electroplating	
	Ion exchanger Ion exchanger	3 m ³ /h 6 m ³ /h
Ruag Biel, Switzerland	Treatment of wastewater from electroplating Selective exchanger	10 m ³ /h
Wieland Metals Singapore Singapore	Treatment of wastewater from electroplating	
	Selective exchanger	9 m ³ /h
	Ion exchanger single line	46 m ³ /h
	Batch neutralisation plants	5 m ³ /h
	Filter unit	6 m ³ /h
Schweizer Electronic AG Schramberg, Germany	Treatment of wastewater from electroplating Selective exchanger	10 m ³ /h

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EPCOS S.A. Evora, Portugal	Treatment of wastewater from electroplating Ion exchanger single line	16 m ³ /h
Jansen AG Oberriet, Switzerland	Treatment of wastewater from electroplating Ion exchanger Optimisation of the existing wastewater treatment plant	16 m ³ /h
ProWaTech AG Embrach, Switzerland	Treatment of wastewater from electroplating Multi-media filter Ion exchanger	6 m ³ /h
Feller Horgen, Switzerland through Wistag	Treatment of wastewater from electroplating Re-circulation ion exchanger	4,5 m ³ /h
Daimler Chrysler AG Sindelfingen, Germany	Treatment of wastewater from electroplating Selective exchanger	80 m ³ /h
TRW Gelsenkirchen, Germany	Treatment of wastewater from electroplating Selective exchanger	6 m ³ /h
Faude Gippingen, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger	4,5 m ³ /h
Stihl Wil, Switzerland	Treatment of wastewater from electro plating Demineralisation plant Continuous neutralisation Batch neutralisation plants Sludge treatment Chemical supply	4,5 m ³ /h 15 m ³ /h 7 m ³ /h
Ruwel Geldern, Germany	Treatment of wastewater from PCB production: Softening and reverse osmosis NOVALIS Batch treatment Persulphate treatment Chemical supply and disposal for the entire factory Selective exchanger	13/3 m ³ /h 12 m ³ /h 1.8 m ³ /h max. 30 m ³ /h
Rotra Technoboards GmbH Kronach, Germany	Treatment of wastewater from PCB production: Re-circulation ion exchanger, desalination cartridge MPA Two separate multimedia filters	12 m ³ /h 5 and 10 m ³ /h
PPC Cham, Switzerland through Wistag AG Flaach/Switzerland	Treatment of process and wastewater from PCB production: Demineralisation plant Softener Re-circulation ion exchanger Three batch neutralisation plants Continuous neutralisation Sludge treatment	6 m ³ /h 15 m ³ /h 20 m ³ /h 4 m ³ /each 15 m ³ /h
Gould Electronics Eichstetten, Germany	Rinse water treatment Re-circulation ion exchanger	40 m ³ /h

Client	Plant Type	Capacity
De Martin Waengi, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger	17 m ³ /h
Huber + Suhner Herisau, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger	17 m ³ /h
Outokumpu Stainless Sheffield, UK	Treatment of Wastewater from Stainless steel pickling Automatic chemical dosing for pickling tanks Chemical bulk storage systems Fume extraction & Scrubbing Partial water recycling	50 m ³ /h
Siemens Matsushita Deutschlandsberg, Austria	Treatment of wastewater from electroplating Sedimentation Evaporation	4 m ³ /h 100 l/h
Ruwel Geldern, Germany	Treatment of wastewater from PCB production: Batch treatment Resist treatment Re-circulation ion exchanger Selective ion exchanger	10 m ³ /h 1.5 m ³ /h 17 m ³ /h 20 m ³ /h
GfE Umwelttechnik Nürnberg, Germany	Treatment of wastewater from electroplating Ion exchanger for the recovery of vanadium	12 m ³ /h
Steiger Vevey, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger Batch treatment of Cr-containing wastewater Batch treatment of Ni-containing wastewater Sedimentation Chamber filter press Final filter Continuous neutralisation of solutions free from metals Final filtration	16 m ³ /h 15 m ³ 15 m ³ 5 m ³ /h 10 m ³ /h
KM Europa Metall Berlin, Germany	Treatment of wastewater from electroplating Reconstruction of a batch neutralisation plant for fluoride-containing wastewater Modernisation of the control system Batch neutralisation Sludge treatment	2 x 5 m ³ /h
Jansen Oberriet, Switzerland	Treatment of washing water: Batch treatment of washing water resulting from degreasing and KMnO ₄ baths	15 m ³ /h
Jean Müller Eltville, Germany	Treatment of wastewater from electroplating (extension of an existing wastewater treatment plant): Re-circulation ion exchanger Batch treatment Special treatment of degreasing baths	4 m ³ /h 3 m ³ /h

Client	Plant Type	Capacity
Jansen Dingelstaedt, Germany	Treatment of wastewater from electroplating Re-circulation ion exchanger Batch treatment of wastewater resulting from phosphate pickling as well as of oil-containing wastewater Sedimentation Chamber filter press Final filtration Chemical storage and supply	12 m ³ /h 1.25 m ³ /h
Estoppey Aegerten-Bien, Germany	Treatment of wastewater from electroplating Re-circulation ion exchanger Chemical storage and dosing station	20 m ³ /h
Euramax Ltd. Corby, UK	Treatment of wastewater from aluminium coil processing Acidification & oil flotation Chromium reduction, pH neutralisation & flocculation Settlement, sludge storage and dewatering Final sand filtration and discharge monitoring Chemical storage & dosing systems	10 m ³ /h
TRW Fahrzeugsysteme GmbH & Co. KG Gelsenkirchen, Germany	Treatment of wastewater from production of chassis components: Ultrafiltration for treating oil-containing wastewater Batch treatment of wastewater resulting from phosphate pickling Batch treatment of wastewater resulting from varnishing adsorption Two ultrafiltration plants (ceramics) for extending the service time Final filtration	600 l/h 20 m ³ /h 3 m ³ /h 120 l/h 4.5 m ³ /h
Grob + Co. AG Horgen, Switzerland	Treatment of wastewater from aircraft component production: Re-circulation ion exchanger Two batch treatment plants Continuous neutralisation Chemical storage and supply	18 m ³ /h 6/10 m ³
Rimmel GmbH Kempten, Germany	Treatment of wastewater from electroplating Re-circulation ion exchanger Batch treatment of cyanide-containing wastewater Batch treatment of chromate-containing wastewater Chamber filter press Final filtration Chemical storage and supply Carbonate freezing to extent the service time Demineralisation plant	5 m ³ /h 9 m ³ 9 m ³ 5 m ³ /h 4 m ³ /h
GE Aviation, Aerostructures Hamble, UK	Effluent Treatment Plant for metal finishing departments including chromium reduction, neutralisation, flocculation, settlement, sludge collection & dewatering, final continuous gravity sand filter, associated chemical dosing systems system upgrade	16 m ³ /h

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Huber + Suhner AG Herisau, Switzerland	Treatment of wastewater from precious metal electroplating Re-circulation ion exchanger SERVO-Cleanflow	17 m ³ /h
TRW Fahrzeugsysteme GmbH & Co. KG Krefeld, Germany	Treatment of wastewater from production of chassis components: Ultrafiltration for treating oil-containing wastewater Batch treatment of wastewater resulting from phosphate pickling Final filtration	200 l/h 20 m ³ /h 4.5 m ³ /h
Brenntag Düren, Germany	Treatment of wastewater from cleaning of tank truck containers of a chemical wholesale supplier: Batch treatment Sedimentation Sludge filtration Final filtration Gasoline separation Particularities: H ₂ O ₂ treatment Low upgrading in the wastewater TDS	10 m ³ /batch
UWE Sondermüll & Recycling GmbH Taucha, Germany	Treatment systems for - wastewater from facilities which have been shut down - wastewater from electroplating shops (centralised treatment) - thin sludge and other liquid media without organic load Anodic cyanide oxidation via electrolysis and subsequent H ₂ O ₂ /Caroat detoxification Chromate detoxification Continuous neutralisation Sedimentation Selective ion exchanger	8 m ³ /h 8 m ³ /h 16 m ³ /h 4 m ³ /h
Festo KG Pneumatic Esslingen, Germany	Treatment of wastewater from electrolytic oxidation Re-circulation ion exchanger Activated carbon filter Batch treatment Chamber filter press Selective ion exchanger Chemical storage and supply	2 m ³ /h 3 m ³ /h 1 m ³ /h
Texas Instruments GmbH Freising, Germany	Treatment of wastewater containing phosphate: Reverse osmosis plant for the removal of phosphate and fluoride from washing water (98 % phosphate removal)	2 m ³ /h
De Martin AG Wängi, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger	15 m ³ /h
Hippold Metallwaren GmbH Kraftisried, Germany	Treatment of wastewater from electroplating Re-circulation ion exchanger	5 m ³ /h

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Brenntag Nürnberg, Germany	Treatment of wastewater from cleaning of tank truck containers of a chemical wholesale supplier: Batch treatment Sedimentation Sludge filtration Final filtration Gasoline separation	10 m ³ /batch
Opel Hungary through Air Industries Stuttgart, Germany	Treatment of wastewater from varnishing: Continuous neutralisation of nitrate-containing wastewater Continuous neutralisation of chromate-containing wastewater Two-stage continuous neutralisation with lamellar clarifier Sludge dehydration, Selective ion exchanger Lacquer coagulation	10 m ³ /h
DEGUSSA AG Schwäbisch Gmünd, Germany	Treatment of wastewater from electroplating pilot plant: Re-circulation ion exchanger SERVO-Cleanflow Treatment of a partial stream via mixed bed and tenside exchanger Re-circulation ion exchanger SERVO-Cleanflow Recovery of metals and preliminary cyanide oxidation via electrolysis cells Batch treatment (cyanide oxidation with H ₂ O ₂ /Caroat), batch treatment of partial streams containing sequestrants Selective anion exchanger Chemical storage and supply station	30 m ³ /h 8 m ³ /h 15 m ³ /h 8 m ³ /h
Straumann SA Mezzovico, Switzerland	Treatment of wastewater from electropolishing and vibratory grinding: Two batch treatment systems Sludge thickening Continuous neutralisation Upgrading of emulsions via ultrafiltration, incl. oil removal and fine filtration	7 m ³ /h each 120 l/h
Landis und Gyr AG Zug, Switzerland	Treatment of wastewater from a special electroplating shop: Re-circulation ion exchanger	5 m ³ /h
Mega Gossau AG Gossau, Switzerland	Treatment of wastewater from electroplating Re-circulation ion exchanger SERVO-Cleanflow, Batch treatment Selective ion exchanger	20 m ³ /h
Spinner GmbH München, Germany	Treatment of wastewater from electroplating Re-circulation ion exchanger SERVO-Cleanflow Re-circulation ion exchanger SERVO-Cleanflow Batch treatment of chromate-containing wastewater Batch treatment of cyanide-containing wastewater Sludge dehydration Selective ion exchanger	20 m ³ /h 5 m ³ /h 1.5 m ³ /h
Ruwel-Werke GmbH Geldern, Germany	Treatment of wastewater from PCB production: Batch treatment Batch treatment of wastewater resulting from photoresist 2 separate sludge disposal systems Final filtration, chemical storage and supply station	5 m ³ /h 10 m ³ /h

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Verzinkerei Oberuzwil AG Oberuzwil, Switzerland	Treatment of wastewater from chrome steel pickling:	
	Re-circulation ion exchanger	8 m ³ /h
	Precipitation of fluoride Continuous neutralisation	3 m ³ /h
Bodenschatz AG Allschwil, Switzerland	Treatment of wastewater from two separate automatic zinc and chromium pickling baths:	
	Re-circulation ion exchanger for acidic and chromic acid-containing wastewater	15 m ³ /h
	Re-circulation ion exchanger for alkaline cyanide-containing wastewater	15 m ³ /h
Brenntag Heilbronn, Germany	Treatment of wastewater from the cleaning of tank truck containers of a chemical wholesale supplier:	
	Batch detoxification	10 m ³
	Sedimentation Sludge filtration Final filtration Gasoline separation	
	Particularities: H ₂ O ₂ treatment Low upgrading in the wastewater salt content	
Zbinden PCB AG Welscherrohr, Switzerland	Treatment of wastewater from PCB production:	
	Re-circulation ion exchanger SERVO-Cleanflow	20 m ³ /h
	2 batch treatment plants	8/5 m ³
	Softening plant Demineralisation plant	15 m ³ /h 4 m ³ /h
J. Hofstetter Lackierwerk Küssnacht, Rigi, Switzerland	Treatment of wastewater from a pre-treatment plant:	
	Re-circulation ion exchanger	8 m ³ /h
	Batch treatment of chromium-containing concentrates Continuous neutralisation	8 m ³ /batch 3 m ³ /h
Interrecycling AG Küssnacht, Rigi, Switzerland	Treatment of wastewater from electrolytic copper recovery	
	Re-circulation ion exchanger SERVO-Cleanflow	12 m ³ /h
Verzinkerei Pratteln AG Pratteln, Switzerland	Treatment of wastewater from an electroplating shop for plastics:	
	Re-circulation ion exchanger SERVO-Cleanflow	15 m ³ /h
	Batch treatment of regenerates and concentrates	10 m ³ /charge
	Selective ion exchanger Demineralisation plant	3 m ³ /h 2.5 m ³ /h
Grohe Thermostat GmbH Lahr, Germany	Treatment of wastewater from the production of fittings:	
	Re-circulation ion exchanger SERVO-Cleanflow for treating wastewater containing nickel,	30 m ³ /h
	Re-circulation ion exchanger SERVO-Cleanflow for treating wastewater containing cyanide,	30 m ³ /h
	Batch treatment of regenerates and concentrates	3 m ³ /h
	Special treatment for removal of metals, Selective ion exchanger	10 m ³ /h
	Demineralisation plant and mixed bed exchanger	3 m ³ /h

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Gould Metall GmbH Eichstetten, Germany	Treatment of wastewater resulting from production of copper foils: Re-circulation ion exchanger	60 m ³ /h
Robert Bosch GmbH Stuttgart, Germany	Treatment of wastewater from electroplating: Re-circulation ion exchanger SERVO-Cleanflow	60 m ³ /h
Markus Hofstetter AG Küssnacht, Switzerland	Treatment of wastewater from semiconductor production: Re-circulation ion exchanger SERVO-Cleanflow Batch treatment of regenerates and concentrates Demineralisation plant	35 m ³ /h 7 m ³ 2.5 m ³ /h
IBM Deutschland GmbH Böblingen, Germany	Treatment of wastewater from semiconductor production: Batch treatment Sedimentation Sludge filtration Particularities:: Metex disposal, organic lead and cadmium complexes	18 m ³ /h

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