

## ESM PROPRIETARY CATALYSTS

The products summarized below are supplied according to specification. We do not supply technical support for the application of the products.

If you have special requirements, please do not hesitate to contact us to evaluate the possibility to customise the products according your specifications.

Furthermore, our primary business is toll manufacturing and custom catalysts. If you are looking for a product not listed below or for the production of your own catalyst technology, please contact us to discuss the possibilities.

NAME	COMPOSITION	POSSIBLE APPLICATION
ESM 311	Promoted iron oxides	Dehydrogenation of ethylbenzene to styrene
ESM 313		Middle temperature shift
ESM 312		
ESM 314		
ESM 331	Al <sub>2</sub> O <sub>3</sub> promoted with K <sub>2</sub> O	COS hydrolysis
ESM 335		
ESM 341	Al <sub>2</sub> O <sub>3</sub> promoted with WO <sub>3</sub> and NiO	Hydrodesulfurization and mild hydrocracking of petroleum fractions and vacuum oil fractions
ESM 362	CoMo catalysts on alumina	Petroleum fraction hydrotreating for removing of sulfur and nitrogen compounds and metallic Impurities
ESM 363		
ESM 364		
ESM 370	Silica promoted with NiO and Cr <sub>2</sub> O <sub>3</sub>	Aldehydes hydrogenation
ESM 371		
ESM 372		
ESM 380	Silica promoted with H <sub>3</sub> PO <sub>4</sub>	Direct hydration of ethylene
ESM 392	Alumina promoted with Pt	Exhaust gas purification of petrol (gas) or diesel engines
ESM 393		Hydrocarbons reforming
ESM 394		Exhaust gas purification of petrol (gas) or diesel engines
ESM 395		
ESM 396		
ESM 400	Alumina promoted with Pd	Gases deoxidation oxygen removing by reaction with hydrogen
ESM 401		Selective hydrogenation of acetylene in C3 streams
ESM 402		Selective hydrogenation of acetylene in C2 streams
ESM 403		Waste gas purification carbon oxide removal combustible or explosive components removal
ESM 404		
ESM 406		
ESM 405		
ESM 420	Alumina promoted with Ag	Special usage
ESM 460	Promoted Cu catalysts	Nitrobenzene hydrogenation to aniline
ESM 461		
ESM 462		Hydrogenation and alkylation of 4-aminodiphenylamine
ESM 465		
ESM 466		
ESM 468		
ESM 470	NiO and SiO <sub>2</sub> promoted catalyst	CO and CO <sub>2</sub> methanation
ESM 480	Alumina promoted by V <sub>2</sub> O <sub>5</sub>	Nitrogen oxides removal
ESM 482	Titania promoted by V <sub>2</sub> O <sub>5</sub>	
ESM 490	CuO, ZnO and A <sub>2</sub> O <sub>3</sub> catalyst	Low temperature shift
ESM 491	Promoted CuO, ZnO and Al <sub>2</sub> O <sub>3</sub> catalyst	
ESM 492	CuO, ZnO and Al <sub>2</sub> O <sub>3</sub> catalyst	Methanol synthesis
ABS 50	Iron based absorbent	H <sub>2</sub> S removal
ABS 65		