

Axens catalysts and adsorbents



Advanced solutions and services

Product listing



Axens is one of the world's leading licensors and manufacturers of catalysts and adsorbents. This catalog lists our products and is for use as a first step in selecting the right materials for your processing needs. The catalysts and adsorbents are listed by process along with some of their key physical characteristics.

Our products, which constitute the most complete portfolio on the market, are grouped according to the following categories:

- Adsorbents (molecular sieves, aluminas and promoted aluminas)
- Grading materials
- Guard beds
- Hydrogenation
- Hydroprocessing
- Reforming and Isomerization
- Specialized catalysts
- Sulfur recovery

Several choices are often possible for a given application and your Axens commercial contacts are available to help you select the optimum solution.

Our offer is more than the material itself.

Each product carries with it Axens' pledge of competitive performance and pricing, uncompromising quality, reliable deliveries and competent technical support before and after-the sale.

You are welcome to find out more about Axens by visiting our website **www.axens.net**, or contacting us at one of our offices – details on back cover.



Benchmark offer

Experience

Decades of scientific achievement in catalyst and adsorbent research, product development, engineering expertise, process licensing, manufacturing capability, and industrial feedback form the basis of the most advanced and reliable catalysts and adsorbents available anywhere.

Quality

These highly technical products issue from modern production facilities with careful attention being paid to each step of the manufacturing process. The quality of materials, procedures and techniques is subject to continuous improvement.

Axens' management systems are ISO 9001 (v2000), ISO 14000 and ISO 18000 certified.

Performance

The true value of our products goes beyond the cost of the delivered material. Axens continuously invests in product development and improvement programs. Our products are backed by performance guarantees assuring that you are getting the proper value for your investment.

Performance management

Technical service

Our strong, experienced and local technical service teams can assist you in all technical matters involving such activities as dense loading of catalysts and adsorbents, start-up assistance, analyses, troubleshooting, catalyst and noble metal management including sourcing of metals, regeneration, material disposal and reactor services.

Resource optimization

Axens offers services designed to optimize returns on both human and operational resources. The Performance Programs business unit is responsible for advanced process control applications, operator training and process simulators, linear programming for refinery optimization, system audits and special training programs. Experience has proven that efforts in these areas are very rewarding and lead operating companies to commercial excellence.



REFORMING AND ISOMERIZATION

	Applications	Material	Shape
CCR Reforming			
PS 40	Gasoline production	Promoted Pt, Sn on Low density Al ₂ O ₃	S
PS 80	Gasoline production	Multipromoted Pt, Sn on Low density Al ₂ O ₃	S
CR 617	Gasoline production	Multipromoted Pt, Sn on Low density Al ₂ O ₃	S
CR 712	Gasoline production	Pt, Sn on Low density Al ₂ O ₃	S
CR 601	Gasoline production	Multipromoted Pt, Sn on High density Al ₂ O ₃	S
CR 607	Gasoline production	Multipromoted Pt, Sn on High density Al ₂ O ₃	S
AR 701	Aromatics Production	Multipromoted Pt, Sn on High density Al ₂ O ₃	S
AR 707	Aromatics Production	Multipromoted Pt, Sn on High density Al ₂ O ₃	S
Cyclic Reforming			
RG 532	Gasoline production	Promoted Pt, Low density Al ₂ O ₃	C
P 15	Gasoline production	Promoted Pt, High density Al ₂ O ₃	C, TL
SR or Cyclic Reforming			
RG 582	Gasoline production	Promoted Pt, Re on Low density Al ₂ O ₃	C
RG 682	Gasoline production	Promoted Pt, Re on Low density Al ₂ O ₃	C
PR 9	Gasoline production	Promoted Pt, Re on High density Al ₂ O ₃	C
PR 11	Gasoline production	Multipromoted Pt, Re on High density Al ₂ O ₃	C
PR 15	Gasoline production	Multipromoted Pt, Re on High density Al ₂ O ₃	C, TL
PR 30	Gasoline production	Multipromoted Pt, Re on High density Al ₂ O ₃	C
PR 33	Gasoline production	Multipromoted Pt, Re on High density Al ₂ O ₃	C
PR 36	Gasoline production	Multipromoted Pt, Re on High density Al ₂ O ₃	C
RG 586	Gasoline production	Promoted Pt, Re on High density Al ₂ O ₃	C
RG 686	Gasoline production	Promoted Pt, Re on High density Al ₂ O ₃	C
Isomerization			
ATIS-1L	C ₄ Paraffin Isomerization	Pt on chlorinated Al ₂ O ₃	C
ATIS-2L	C ₅ -C ₆ Paraffins Isomerization	Pt on chlorinated Al ₂ O ₃	C
IS 463	C ₅ Olefins Skeletal Isomerization (Iso-5®)	Proprietary	S



SULFUR RECOVERY

	Applications	Material	Shape
Claus Catalyst			
AM	Oxygen Scavenger in Sulfur Recovery Units	Proprietary, Al ₂ O ₃	S
AMS	Oxygen Scavenger in Sulfur Recovery Units	Proprietary, Al ₂ O ₃	S
CR	Claus Reaction	Al ₂ O ₃	S
CR 35	Claus Reaction + COS hydrolysis	Al ₂ O ₃	S
CRS 31	Claus Reaction + COS/CS ₂ hydrolysis	TiO ₂	C
CRS 31 TL	Claus Reaction + COS/CS ₂ hydrolysis	TiO ₂	TL
CSM 31	Claus Reaction and Carsul Management	Proprietary, Al ₂ O ₃	S
DR	Active Bed Support for Claus reactors	Al ₂ O ₃	S
Tail Gas Treatment Catalyst			
TG 103	Tail Gas Treatment	CoMo, Al ₂ O ₃	S
TG 133	Tail Gas Treatment	CoMo, Al ₂ O ₃	TL
Tail Gas Treatment Catalyst			
TG 107	Low temperature Tail Gas Treatment	CoMo, Al ₂ O ₃	S
TG 136	Low temperature Tail Gas Treatment	CoMo, Al ₂ O ₃	TL

KEY

Shape: C Cylindrical Extrudate G Granule R Ring S Sphere TL Trilobal Extrudate

Applications		Material	Shape
Residue Hydrotreating			
HF 402	HDM of AR and VR	Mo, Al ₂ O ₃	TL
HMC 868	HDM of AR and VR	NiMo, Al ₂ O ₃	S
HF 858	HDM of AR and VR	NiCoMo, Al ₂ O ₃	TL
HM 848	HDM/HDS of AR and VR	NiCoMo, Al ₂ O ₃	TL
HT 438	HDS of AR and VR	NiCoMo, Al ₂ O ₃	TL
VGO Hydrotreating			
HR 526	High HDS Activity	CoMo, Al ₂ O ₃	TL
HR 508	High HDS, HDN Activity	NiMo, Al ₂ O ₃	TL
HR 538	High HDS, HDN Activity	NiMo, Al ₂ O ₃	TL
HR 548	High HDS, HDN Activity	NiMo, Al ₂ O ₃	TL
HR 568	High HDS, HDN Activity	NiCoMo, Al ₂ O ₃	TL
HR 504	High HDS, HDN Activity	NiCoMo, Al ₂ O ₃	TL
HR 544	High HDS, HDN Activity	NiCoMo, Al ₂ O ₃	TL
Middle Distillate and Naphtha Hydrotreating			
HR 626	High HDS Activity	CoMo, Al ₂ O ₃	TL
HR 608	High HDS, HDN, HDA Activity	NiMo, Al ₂ O ₃	TL
HR 648	High HDS, HDN, HDA Activity	NiMo, Al ₂ O ₃	TL
Hydrocracking			
HRK 558	Hydrocracking pretreatment catalyst, high HDN activity	NiMo, Al ₂ O ₃	TL
HRK 658	Hydrocracking pretreatment catalyst, high HDN activity	NiMo, Al ₂ O ₃	TL
HDK 766	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Proprietary Carrier	TL
HDK 776	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Proprietary Carrier	TL
HDK 786	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Proprietary Carrier	TL
HYC 642	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	C
HYC 652	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	C
HYK 732	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	TL
HYK 742	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	TL
HYK 752	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	TL
HYK 762	Hydrocracking for Middle Distillates & Lube Oil production	Metals on Zeolite	TL
HTS 358	HDS & HDN of VGO in Ebullated Bed (H-Oil DC®)	Proprietary	C, TL
Prime-G+™			
HR 845	Selective Hydrogenation of Cracked Gasoline	Proprietary	S
HR 806	Selective HDS of Cracked Gasoline	Proprietary	S
HR 841	Selective HDS of Cracked Gasoline	Proprietary	S
Naphtha and Middle Distillate Hydrogenation			
HR 945	Hydrogenation of Olefins and Diolefins for Delta P Management	NiMo, on neutral Al ₂ O ₃	S
HR 955	Hydrogenation of Olefins and Diolefins for Delta P Management	NiMo, on neutral Al ₂ O ₃	TL
HR 965	Hydrogenation of Olefins and Diolefins for Delta P Management	NiMo, on neutral Al ₂ O ₃	TL

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GRADING MATERIALS

	Applications	Material	Shape
Inert Grading			
Ceramic Balls	Bed topping	Ceramic	S
Alumina Balls	Bed topping	Al ₂ O ₃	S
ACT 068	Speciality bed topping	Ceramic	Pentaring
ACT 069	Speciality bed topping	Ceramic	Pentaring
ACT 070	Speciality bed topping	Ceramic	Pentaring
ACT 072	Speciality bed topping	Ceramic	Pentaring
ACT 077	Speciality bed topping	Al ₂ O ₃	Macroporous Fluted Ring
ACT 078	Speciality bed topping	Ceramic	Fluted Ring
ACT 108	Speciality bed topping	Ceramic	R
ACT 139	Speciality bed topping	Al ₂ O ₃	Macroporous Sphere
Active Grading			
ACT 935	Diolefins and Olefins saturation. Gums and polymer formation control	NiMo, Al ₂ O ₃	R
ACT 945	Diolefins and Olefins saturation. Gums and polymer formation control	NiMo, Al ₂ O ₃	S
ACT 955	Diolefins and Olefins saturation. Gums and polymer formation control	NiMo, Al ₂ O ₃	TL
ACT 961	Metal (Silica) Trap	NiMo, Al ₂ O ₃	C
ACT 971	Metal (Silica) Trap	NiMo, Al ₂ O ₃	TL
ACT 981	Metal (Silica) Trap	NiMo, Al ₂ O ₃	TL
ACT 991	Metal (Silica) Trap	NiMo, Al ₂ O ₃	TL
ACT 979	Metal (Arsenic) Trap	Proprietary	S
ACT 989	Metal (Arsenic) Trap	NiMo, Al ₂ O ₃	TL



HYDROGENATION

	Applications	Material	Shape
Selective Hydrogenation			
LD 265	Diolefins Selective Hydrogenation & Olefins Hydrogenation	Pd, Al ₂ O ₃	S
LD 365	Pyrolysis Gasoline (Pygas) Diolefins Selective Hydrogenation	Pd, Al ₂ O ₃	S
LD 465	Pygas Diolefins Selective Hydrogenation	Pd, Al ₂ O ₃	S
LD 485	Pygas Diolefins Selective Hydrogenation	Pd, Al ₂ O ₃	S
LD 241	PyGas Diolefins Selective Hydrogenation	Ni, Al ₂ O ₃	S
LD 341	PyGas Diolefins Selective Hydrogenation	Ni, Al ₂ O ₃	S
LD 441	PyGas Diolefins Selective Hydrogenation	Ni, Al ₂ O ₃	S
LD 541	Pygas Diolefins Selective Hydrogenation	Ni, Al ₂ O ₃	TL
LT 279	C ₂ and C ₃ cuts Selective Hydrogenation	Pd, Al ₂ O ₃	S
LD 273	C ₃ cut Selective Hydrogenation	Pd, Promotor, Al ₂ O ₃	S
LD 271	Butadiene Hydrogenation with Maximum 1-Butene Yield	Pd, Promotor, Al ₂ O ₃	S
LD 277	Raw C ₄ cut Acetylenes Selective Hydrogenation	Pd, Promotor, Al ₂ O ₃	S
LD 267 R	Butadiene Hydrogenation with 1-Butene Isomerization	Ready to Use, Pd, Al ₂ O ₃	S
LD 269	Butadiene Hydrogenation with 1-Butene Isomerization	Pd, Al ₂ O ₃	S
LD 2773	FCC C ₄ /C ₅ cuts or Phenylacetylene Selective Hydrogenation	Pd, Promotor, Al ₂ O ₃	S
Total Hydrogenation			
LD 402	Olefins and Aromatics Hydrogenation	Pt, Al ₂ O ₃	C
LD 412 R	Olefins and Aromatics Hydrogenation	Ready to Use Pt, Al ₂ O ₃	C
AX 746	Olefins and Aromatics Hydrogenation	Ni, Al ₂ O ₃	TL
LD 746	Olefins and Aromatics Hydrogenation	Ni, Al ₂ O ₃	TL
Gasoline Hydrotreating			
LD 145	Cracked Gasoline Diolefins & Olefins Hydrogenation	NiMo, neutral Al ₂ O ₃	S
HR 406	Cracked Gasoline HDS, HDN and Olefins Saturation	CoMo, Al ₂ O ₃	TL
HR 606	Cracked Gasoline HDS, HDN and Olefins Saturation	CoMo, Al ₂ O ₃	TL

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ADSORBENTS

	Applications	Material	Shape
Drying Series			
AA 300	Air, Gas and Liquid Drying	Al ₂ O ₃	S
AxSorb A	Air, Gas and Liquid Drying	Al ₂ O ₃	S
AxSorb D	Air, Gas and Liquid Drying	Al ₂ O ₃	S
AxSorb 510	Special Alumina for the Multibed Technology	Al ₂ O ₃	S
AxSorb 531	Gas and liquid selective drying	Zeolite	C
AxSorb 533	Gas and liquid selective drying	Zeolite	C
AxSorb 537	Cracked gas and olefins drying	Zeolite	C
AxSorb 541	Gas and liquid drying	Zeolite	C
AxSorb 543	Gas and liquid drying	Zeolite	C
Purification Series			
ActiGuard 600PC	CO ₂ , Sulfur, Nitrogen & Oxygenates Compounds Removal	Al ₂ O ₃	S
AxSorb 900	CO ₂ , Sulfur, Nitrogen & Oxygenates Compounds Removal	Al ₂ O ₃	S
AxSorb 911	CO ₂ , Sulfur, Nitrogen & Oxygenates Compounds Removal	Zeolite	C
AxSorb 913	CO ₂ , Sulfur, Nitrogen & Oxygenates Compounds Removal	Zeolite	C
AxSorb 920	TBC Removal from Monomers	Al ₂ O ₃	S
AxSorb 922	TBC Removal from Monomers	Al ₂ O ₃	S
AxSorb 951	Hydrogen purification and NG/NGL sweetening	Zeolite	C
AxSorb 960	Water and Oxygenates Removal from Olefins	Al ₂ O ₃	S
AxSorb 964	Oxygenates Removal	Al ₂ O ₃	TL
AxSorb 980	COS, CS ₂ & CO ₂ Removal	Al ₂ O ₃	S
Speciality Series			
ActiGuard H2O2	Hydrogen Peroxide	Al ₂ O ₃	G,S
AxSorb 310	Hydrogen Peroxide	Al ₂ O ₃	S
AxSorb 330	TBA Dehydration	Al ₂ O ₃	S
AxSorb 332	TBA Dehydration	Al ₂ O ₃	S
AxSorb 351	N-iso paraffins separation	Zeolite	C
AxSorb 351 IPS	Ipsorb process	Zeolite	C
Water Treatment Series			
ActiGuard AA400G	Arsenic and Fluoride Removal	Al ₂ O ₃	G
ActiGuard AAF550	Arsenic, Fluoride and other metals removal	Al ₂ O ₃	G
ActiGuard Fluorograde	Arsenic and Fluoride Removal	Al ₂ O ₃	S
ActiGuard SG	Arsenic and Fluoride Removal	Al ₂ O ₃	TL



GUARD BEDS

	Applications	Material	Shape
Arsine Series			
AxTrap 191	Arsine & COS Removal	Al ₂ O ₃	S
AxTrap 192	Arsine & COS Removal	Al ₂ O ₃	S
Mercury Series			
AxTrap 261	Mercury Removal from olefinic streams	Al ₂ O ₃	S
AxTrap 271	Mercury Removal from Gas Streams	Al ₂ O ₃	S
AxTrap 273	Mercury Removal from Gas & Liquid Streams	Al ₂ O ₃	S
AxTrap 277	Mercury Removal from Gas Streams	Al ₂ O ₃	S
AxTrap 291	Mercury Removal from Gas Streams	Al ₂ O ₃	TL
CMG 406	Arsenic and Mercury Removal from liquids (RAM II®)	Proprietary	S
CMG 841	Arsenic and Mercury Removal from liquids (RAM II®)	Proprietary	S
HF Series			
ActiGuard HF	HF & Fluorides Removal	Al ₂ O ₃	S
AxTrap 601	HF & Fluorides Removal	Al ₂ O ₃	S
Chloride Series			
ActiGuard CL	HCl Removal from Gas Stream	Al ₂ O ₃	S
AxTrap 857	HCl Removal from Gas Stream	Al ₂ O ₃	S
AxTrap 858	HCl Removal from Liquid Stream	Al ₂ O ₃	S
Sulfur Removal Series			
AxTrap 401	Sulfur Removal	Proprietary	C
AxTrap 405	Sulfur Removal	Proprietary	TL

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SPECIALIZED CATALYSTS

Applications		Material	Shape
Heterogeneous Oligomerization			
IP 811	Olefins Oligomerization to Gasoline and/or Middle Distillates (Polynaphtha)	Proprietary	TL
TA 801	Olefins Oligomerization to Gasoline and/or Middle Distillates (OATS)	Proprietary	S
Homogeneous Oligomerization			
LC 1252	C ₃ or C ₄ Olefins Dimerization (Dimersol®)	Proprietary	L
LC 1255	C ₃ or C ₄ Olefins Dimerization (Dimersol®)	Proprietary	L
LC 2253	Ethylene Dimerization to 1-Butene (AlphaButol®)	Proprietary	L
Cyclohexane Production			
HC 1023	Benzene Hydrogenation	Proprietary	L
HC 1025	Benzene Hydrogenation	Proprietary	L
LD 143	Benzene Hydrogenation	Ni, Al ₂ O ₃	S
Linear Alkyl Benzenes (LAB)			
DP 805	Dehydrogenation of linear paraffins	Promoted Pt, Sn on Al ₂ O ₃	S
DP 815	Dehydrogenation of linear paraffins	Promoted Pt, Sn on Al ₂ O ₃	S
LD 276	Selective hydrogenation of diolefins from Dehydrogenation	Pd, Al ₂ O ₃	S
Sweetening			
LCPS 20	Sweetening of light hydrocarbons such as LPG, NGL and Light Naphtha Specifically formulated for storage at low temperature (<5°C)	Sulfonated Cobalt Phtalocyanine	L
LCPS 30	Sweetening of LPG, NGL, Naphtha, Middle Distillates	Sulfonated Cobalt Phtalocyanine	L
SCPS Ready	Fixed Bed sweetening of LPG, NGL, Naphtha, Middle Distillates	Sulfonated Cobalt Phtalocyanine on activated carbon	S
Biodiesel Production			
STR 111	Transesterification of Vegetable Oils	Mixed oxide of aluminium and zinc	C
Environment			
DN115	DeNOx Catalyst	Proprietary	S

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Quality products

Performance management

Benchmark offer

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