The world reference in stainless steel, supporting developments in the automotive market

Swiss Steel Group

Stainless steels and alloys for the automotive Industry

Ugitech produces stainless steels in the form of bars, billets, wire rods and drawn wires.

The facilities and expertise of an international company with over twenty years' experience working with the world leaders of the automotive market.

As a key player in the field of Innovation, thanks to its Research Center specialising in stainless steels, Ugitech will show you the way to improve your reliability and competitiveness.

Ugitech is your partner for all your developments.

Drawn wire

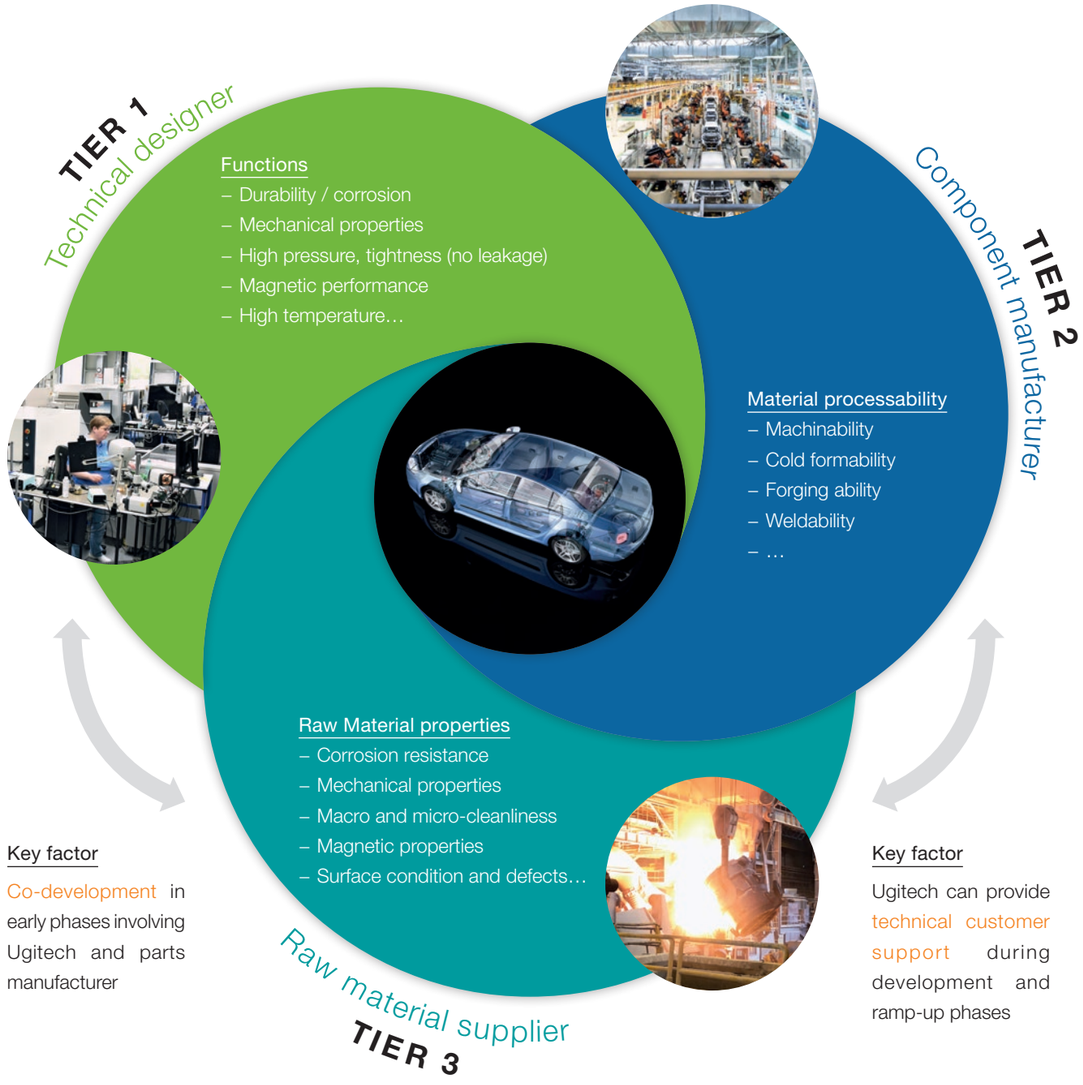
Bars

The major challenges of mobility

- Electrification
- Emission control (CO_2 and PM reduction)
- Alternative fuels, e-fuels
- Components downsizing
- Increase of pressure (GDI)
- Increased safety and reliability
- Hydrogen

In order to address all these issues, Ugitech provides you with a range of products and services.

Our approach
Key factors for successful projects



Key factor

Co-development in early phases involving Ugitech and parts manufacturer

Key factor

Ugitech can provide technical customer support during development and ramp-up phases

Our expertise in the most demanding fields

Internal combustion engine

Expertise in magnetic properties & resistance to high pressure

- Injectors
- Fuel rails
- Pressure sensors
- Solenoid valves
- High pressure pumps
- Low pressure pumps
- Throttle shaft
- Spark / glow plugs

Turbocharger

Solutions for resistance to high temperatures and seizing

- EGR valve
- Throttle shaft
- Rotary electrical / pneumatic actuators
- Turbine wheel
- Nozzles

Exhaust

Recommendations for Corrosion / High temperature cyclic oxidation

- Anchoring hook
- Steel wool
- Lambda probe
- SCR system (urea injection)
- Welding wire
- Sensor bosses
- Flanges

Active and passive safety system

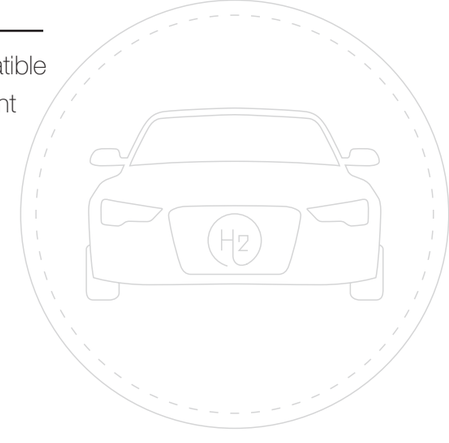
Control of mechanical properties & contribution to lighter weights

- Airbag
- Safety belt
- Weight sensor
- ABS
- Electric parking brake
- Springs

Hydrogen

Selection of grades compatible with hydrogen embrittlement for FCEV & HICE

- Refueling Nozzle
- On tank valve / outlet tank valve
- Check valve
- Shut-Off valve
- Thermal relief valve
- Pressure sensor
- Hydrogen Injector
- Air compressor
- Pressure regulator



An unrivalled product range

Dimensional range

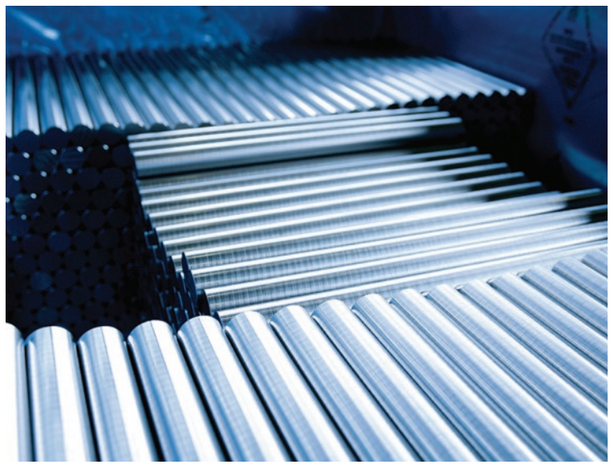
Ugitech produces and markets a complete, constantly evolving range that is well suited to the continually changing activities of our customers:

	Semi-finished products	Bars	Wire rod	Stainless steel drawn wire & alloys
Use	**Forging** **Re-rolling** **Extrusion**	**Bar turning** **Machining** **Forging**	**Wire drawing** **Drawing** **Cold heading**	**Forming** **Welding (MIG, TIG, electrodes)** **Spring sizing** **Bar turning** **Cold heading** **Combing**
●	21 to 130 mm	1.8 to 130 mm	5 to 32 mm	0.013 to 18 mm
■	50 to 140 mm	-	-	Section profiles 2 to 70 mm²
⬢	-	3 to 60 mm	12.4 to 28 mm	

Finishings

Customised finishings: length, ends, wide choice of packaging.

Presentations (bars only)	Diameter	ISO tolerance
Black semi-finished products	21 to 130 mm	-
Rolled and descaled	20 to 130 mm	13
Turned and polished	20 to 130 mm	12, 11, 10
Fine turned and polished	20 to 55 mm	9, 10
Cold drawn	1.8 to 30 mm	9.8
Ground	1.8 to 30 mm	9 to 6



Guaranteed high quality stainless steel bars

– Quality control appropriate for the criticality of your part
– State-of-the-art automated non destructive testing:
  · Eddy-current testing (ET) for surface defect detection
  · Ultrasonic testing (UT) for internal flaws (Phased Array Technology)
– Guaranteed product traceability at each transformation stage
– Men and women certified to ISO 9712 ASNT NAS 410
– Our testing laboratory is ISO 17025 certified

A complete range of grades

More than 250 stainless steel grades (ferritic, martensitic, austenitic, duplex) with different metallurgical conditions suitable for your applications:

– improved machinability for maximum productivity in large production runs: UGIMA® ranges
– improved inclusion cleanliness when application tightness is required (thin walls/high pressure):
  · Air-melting with guaranteed cleanliness: “Premium” variants
  · ESR* remelted grades for the most sensitive applications: UGIPURE®
– optimised magnetic properties for injector and solenoid valve parts: UGIPERM® range
– for welding filler wire: UGIWELD™ and EXHAUST® ranges
– for high-performance springs: UGIPURE® - UGIPLEX® – SPRINOX®
– for resistance to very high temperature: nickel-based UGIALLOY®

* ESR: Electro Slag Remelting

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Main grades Bars for the automotive industry

Descriptions				Chemical composition						1 ICE 2 Active & passive safety system 3 Turbocharger 4 Exhaust 5 FCEV, HICE	Variants U UGIMA® P Premium E ESR
EN	UNS	JIS	AISI, ASTM, others	C	Ni	Cr	Mo	S	Other elements		
Austenitics											
1.4301	S30400	SUS 304	304	≤ 0.07	8 - 10.5	17.0 - 19.5		≤ 0.030	Mn ≤ 2; Si ≤ 1	1 2 3	U
1.4305	S30300	SUS 303	303	≤ 0.10	8 - 10	17-19		0.15 - 0.35	Mn ≤ 2; Si ≤ 1; Cu ≤ 1	1 2	U P
1.4307	S30403	SUS 304L	304 L	≤ 0.03	8 - 10.5	17.5 - 19.5		≤ 0.030	Mn ≤ 2; Si ≤ 1	1 2	U P E
1.4404	S31603	SUS 316L	316L	≤ 0.03	10 - 13	16.5 - 18.5	2 - 2.5	≤ 0.030	Mn ≤ 2; Si ≤ 1	3	U E
1.4435	S31603	SUS316L	316L	≤ 0.03	12.5 - 15	17.0 - 19.0	2.5 - 3.0	≤ 0.030	Mn ≤ 2; Si ≤ 1	5	P E
1.4828			309Si	≤ 0.20	11 - 13	19 - 21		≤ 0.015	Si 1.5 - 2.5	3	
1.4841	S31400		314	≤ 0.20	19 - 22	24 - 26		≤ 0.015	Si 1.5 - 2.5	3	
1.4845	S31008	SUS 310S	310S	≤ 0.10	19 - 22	24 - 26		≤ 0.015	N ≤ 0.11; Si ≤ 1.5	3	
Ferritics											
1.4016	S43000	SUS 430	430	≤ 0.08		16 - 18		≤ 0.030	Mn ≤ 1	1 4	
1.4511		SUS 430LX	430LNb	≤ 0.05		16 - 18		≤ 0.030	Mn ≤ 1; Nb 12xC - 1	1 4	U
1.4509	S43940	SUS 430LX	441	≤ 0.03		17.5 - 18.5		≤ 0.015	Ti 0.1 - 0.6; Nb 3xC+0.3 - 1	4	U
1.4105	S43020		430F	≤ 0.08		16 - 18	0.2 - 0.6	0.150 - 0.350	Mn ≤ 1.5; Si 1.2	1 4	U
1.4105			4105Si 430FR	≤ 0.08		16 - 18	0.2 - 0.6	0.150 - 0.360	Mn ≤ 1.5; Si 1.5	1 4	
1.4106*	S18200			≤ 0.03	≤ 0.5	17.5 - 18	1.5 - 2.0	0.230-0.280	Mn ≤ 0.6; Si: 1.4	1 4	
1.4113	S43400	SUS 434	434	≤ 0.08		16 - 18	0.9 - 1.4	≤ 0.030	Mn ≤ 1	4	
1.4114*			434F UGV182	0.05 - 0.08	≤ 0.5	17.5 - 19	1.5 - 2.5	0.150 - 0.250	Mn ≤ 0.5	4	
1.4003				≤ 0.03	0.3 - 1.0	10.5 - 12.5		≤ 0.03	Si ≤ 1.0; Mn ≤ 1.5; N ≤ 0.03	1	
1.4045			Ugiperm12F	≤ 0.02	≤ 0.5	11 - 13	≤ 0.5	0.150 - 0.250	Si 1.5; Mn ≤ 0.5	1	
1.4742				≤ 0.12		17 - 19		≤ 0.015	Al: 0.7 - 1.2; Si: 0.7 - 1.4	3	

* Grades not defined in EN10088 (2014)

Descriptions				Chemical composition						1 ICE 2 Active & passive safety system 3 Turbocharger 4 Exhaust 5 FCEV, HICE	Variants U UGIMA® P Premium E ESR
EN	UNS	JIS	AISI, ASTM, others	C	Ni	Cr	Mo	S	Other elements		
Martensitics											
1.4104	S43020		430F	0.10 - 0.17		15.5 - 17.5	0.2 - 0.6	0.15 - 0.35	Mn ≤ 1.5; Si ≤ 1	2 3 4	U P
1.4006	S41000	SUS 410	410	0.08 - 0.15	≤ 0.75	11.5 - 13.5		≤ 0.030	Mn ≤ 1.5; Si ≤ 1	1	U
1.4021	S42000	SUS 420J1	420	0.16 - 0.25		12 - 14		≤ 0.030	Mn ≤ 1.5; Si ≤ 1	1	U
1.4028	S42000	SUS 420J2	420	0.26 - 0.35		12 - 14		≤ 0.030	Mn ≤ 1.5; Si ≤ 1	1 2	U
1.4029	S42020	SUS 420F	420F	0.25 - 0.32		12 - 13.5	≤ 0.6	0.15 - 0.25	Mn ≤ 1.5; Si ≤ 1	1	U
1.4034	S42000		420	0.43 - 0.50		12.5 - 14.5	≤ 0.5	≤ 0.030	Mn ≤ 1; Si ≤ 1	1 2	U
1.4037*			B51	0.58 - 0.70		12.5 - 14.5		≤ 0.015	Mn ≤ 1; Si ≤ 1	1	
1.4116				0.45 - 0.55		14 - 15	0.5 - 0.8	≤ 0.030	Mn ≤ 1; Si ≤ 1; N ≤ 0.15	1 2	U E
1.4057	S43100	SUS 431	431	0.17 - 0.20	2 - 2.5	15 - 16.5		≤ 0.005	Mn ≤ 1; Si ≤ 0.8	1	U P E
1.4313	S41500			≤ 0.05	3.5 - 4.5	12.0 - 14.0	0.3 - 0.7	≤ 0.030	Mn ≤ 1; Si ≤ 0.7; N ≥ 0.02	1	
1.4418		SUS F6NM		≤ 0.06	4 - 6	15 - 17	0.8 - 1.5	≤ 0.030	Mn ≤ 1.5; Si ≤ 0.7; N ≥ 0.02	1	P E
1.4542	S17400	SUS 630	17-4PH 630	≤ 0.07	3 - 5	15 - 17	≤ 0.6	≤ 0.030	Nb 0.05 - 0.45; Cu 3 - 5; Si ≤ 0.7	1 2	U P E
Duplex											
1.4362	S32304			≤ 0.03	3.5 - 5.5	22 - 24.5	0.1- 0.6	≤ 0.015	Cu 0.1 - 0.6; N 0.05 - 0.2	1	U
1.4462	S32205	SUS 329J3L	F51	≤ 0.03	4.5 - 6.5	21 - 23	2.5 - 3.5	≤ 0.015	Mn ≤ 2; Si ≤ 1; N 0.10 - 0.22	1	
Alloys											
1.4980	S66286		660 A286	0.03 - 0.08	24 - 27	13.5 - 16	1.0 - 1.5	≤ 0.015	Mn 1 - 2; Ti 1.9 - 2.3; V 0.1 - 0.5; B 0.003 - 0.010	3 4	
2.4668	N07718		718	≤ 0.08	50 - 55	17 - 21	2.8 - 3.3	≤ 0.015	Nb + Ta 4.75 - 5.50; Al 0.2 - 0.8; Ti 0.65 - 1.15	3	
	R30605		L605	0.05 - 0.15	9 - 11	19 - 21		≤ 0.030	Co 52 - 58; W 14 -16; Mn 1 - 2	3	

Innovation at the heart of your products

Ugitech has a long tradition of R&D and has a dedicated Research Center. Our experts in the various fields of materials science and our investigation resources contribute to the mastery and development of our products, processes and services.

15% of our product range is therefore renewed every 6 years.

Area of expertise:

- Melting, inclusion control
- Stainless steel and alloy metallurgy
- Heat treatments
- Mechanical properties, fatigue strength
- Magnetism
- Corrosion and oxidation
- Machinability
- Welding
- Cold-working processes
- Coatings
- Non-Destructive Testing

Co-development:
Ugitech supports you in the early stages of the project and helps you during the industrialization process thanks to its technical assistance covering all areas of expertise (machinability, forgeability, weldability, corrosion…).

Towards Hydrogen society:

Ugitech is determined to be part of a global Hydrogen ecosystem:

- innovation in materials adapted to mobility applications FCEV or H-ICE (UGI® 4435H2…)
- on-site hydrogen production projects
- use of hydrogen to reduce the carbon footprint of our process

Ugitech has acquired expertise and experience in the field of hydrogen embrittlement of stainless steels.

Its Research Center has resources dedicated to the study of this complex phenomenon (measurement of hydrogen diffusivity, slow strain rate testing…).

Among the different families of stainless steels, austenitic steels rich in nickel are the most resistant to hydrogen embrittlement.

Services tailored to your needs

A quality system to meet the most stringent requirements and recognised by EN 9100 – EN 9120 – ISO/TS 16949 – ISO 9001 – ISO 13485 – ISO 14001 – ISO 50001 certifications. Ugine's test laboratories are ISO/IEC 17025 certified.

Ugitech is actively involved in the pursuit of operational excellence inspired by the European Foundation for Quality Management (EFQMR) approach and based on the World Class Management (WCM) method.

Reliable technical support: consultants and experts are available throughout the world to help, inform and support you in the development of all your automotive projects.

High flexibility due to short rolling cycles and safety of supply via various logistics solutions.

An experienced global sales presence thanks to the sales network of Swiss Steel group.

A customized eServices portal to allow you to track the progress of your orders and download related documents (delivery notes, certificates, invoices).

Swiss Steel Group

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