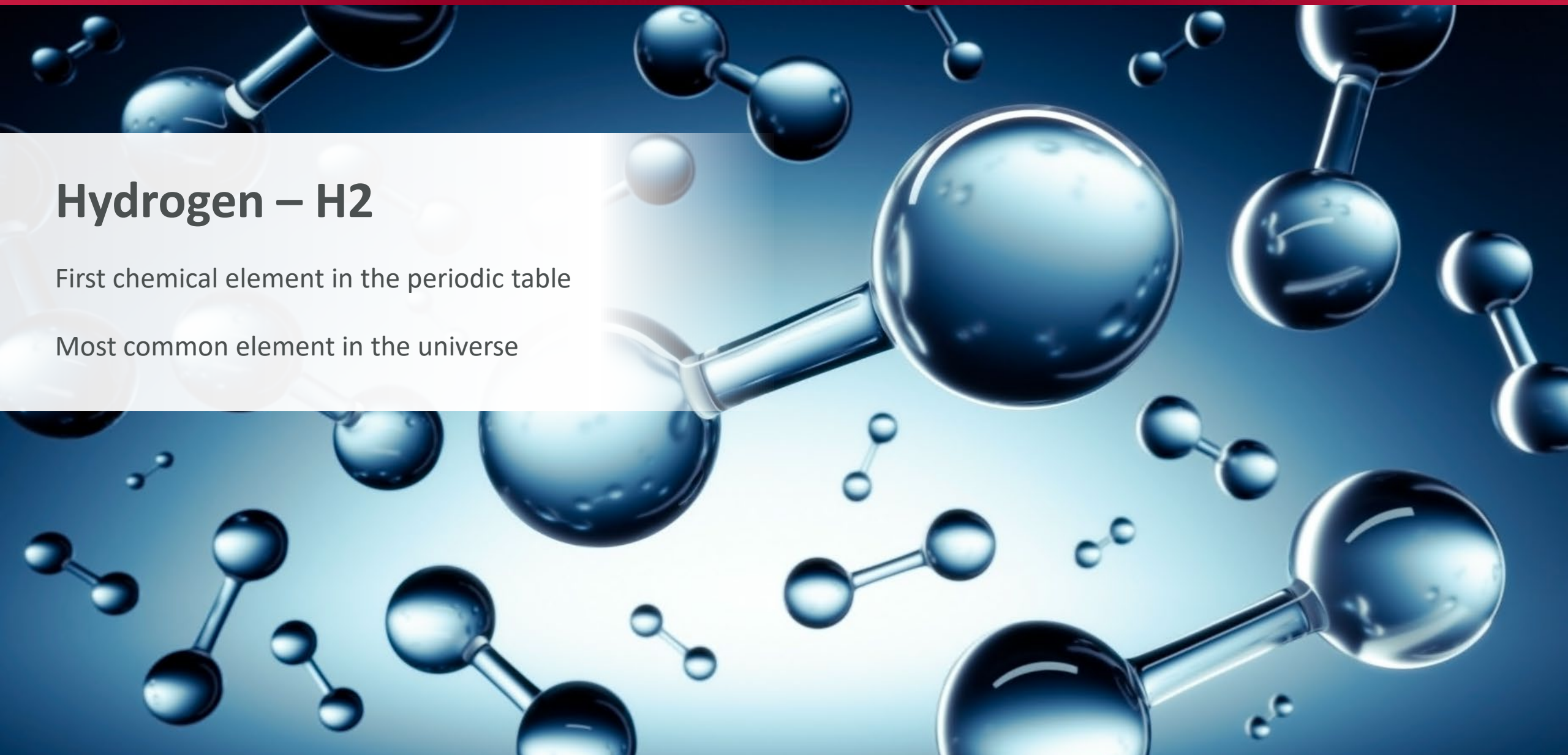

ARMATUREN
GOETZE
Goetze Safety Valves for
Hydrogen Applications

Hydrogen – H2

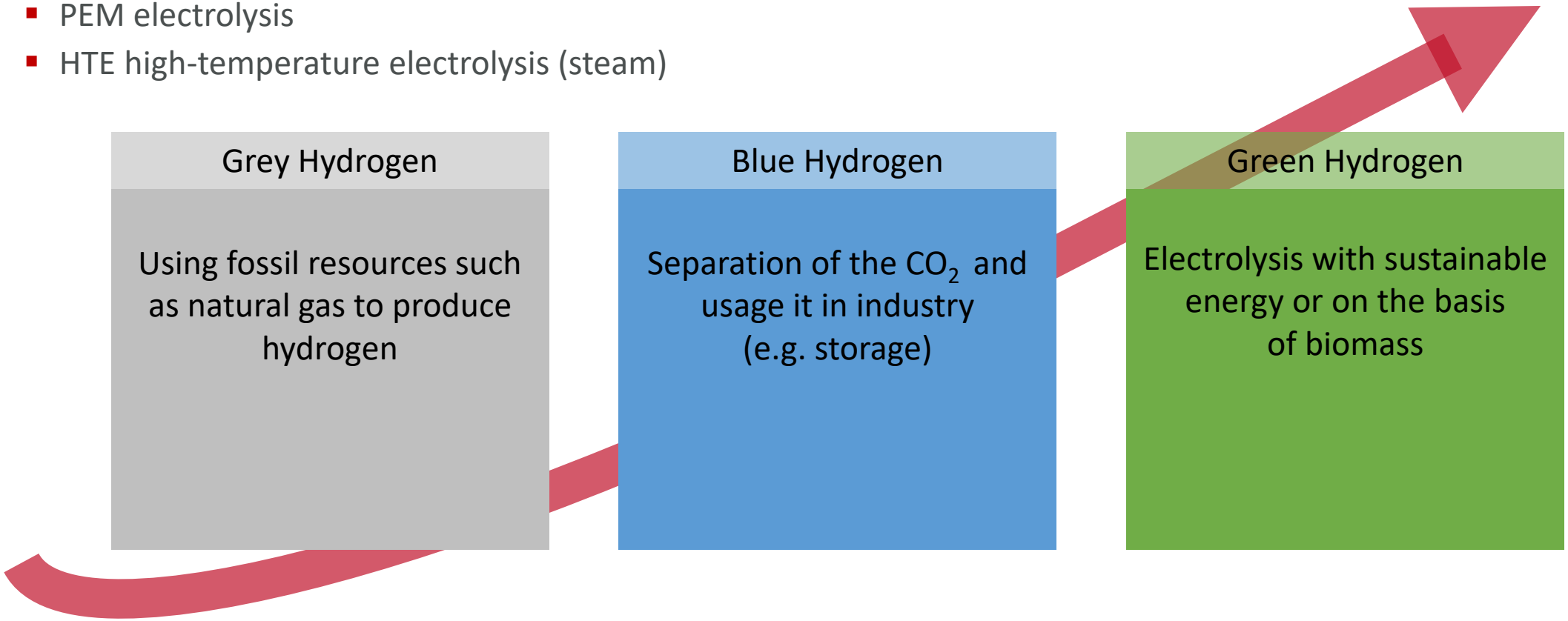
First chemical element in the periodic table

Most common element in the universe



Hydrogen Sourcing

- Mainly via electrolysis
  - Alkaline water electrolysis
  - PEM electrolysis
  - HTE high-temperature electrolysis (steam)



Hydrogen Applications

- Production of hydrogen
  - By means of electrolysis based on water
- Storage of hydrogen
  - High pressure or low temperatures in storage tanks
- Transportation of hydrogen
  - High pressure or low temperatures in storage tanks
  - Hydrogen is added as a gas for transportation
- Use of hydrogen
  - Mobility: fuelling stations, F-cell vehicles
  - Industry: production processes
  - Energy storage: Use of hydrogen as a source of energy and for re-electrolysis

Safety has top priority

- Independent of general maintenance: 24/7 365 days = safe operation of the plant
- Sizing of valves and corresponding pipelines is crucial
- Selection of material
- Certification of components and material
- Long-term tests for process valves

Project Example

Heavy Goods Vehicle

- Sizing of pipe system (feed pipes and blow-off pipes)
- Sizing of the safety valves
- Valve customizing with regards to the blow off capacity
- Boil-off process:
  consideration not only of the excess pressure, but also of the medium itself (volume, added media to bundle the H2)
- Realization of first prototypes

What is a safety valve?

- Last mechanical component in the safety chain
- Protection against excess pressure

Series 492: High pressure

Stainless steel threaded atmospheric discharge safety valve

Threaded connections
optional with swivel outlet
Nominal sizes: DN 6 to DN 15

Temperatures
from -60°C to +200°C

Pressure
from 50 to 1500 bar

Materials

Media

Applications:
- Compressors
- Fuelling stations
- Tanks, compressed H2

Series 492: High pressure

Showcase Project: H2 Refuelling Station Beijing / China:

Series 451 / 420: Without limits

Stainless steel angled safety valves

Threaded connections
Nominal sizes: DN 8 to DN 10 and
DN 15 to DN 50

Temperatures
from -60°C to +400°C

Pressure
from 0,5 to 70 bar

Materials

Media

Applications:

- *Electrolysis: such as alkaline or PEM*
- *Along the hydrogen value chain*

Series 2400:
Flexibility up to cryogenic applications

Stainless steel angle safety valve

Threaded connections
Nominal sizes: DN8 to DN40

Temperatures
from -200°C to +200°C

Pressures
from 0,2 to 70 bar

Material

Media

Applications:

- Electrolysis: such as alkaline or PEM
- Along along the hydrogen value chain

Series 455: Large volumes

Stainless steel flange safety valve

Flange connections
Nominal sizes: DN 15 to DN 100

Temperatures
from -255°C to +400°C

Pressure
from 0,2 to 40 bar

Materials

Media

Applications:
- Processes with large volumes
- Storage of hydrogen (tanks)

Series 484: Process gas regulation

Pressure reducing valve for high pressures

Threaded connections
Nominal sizes: DN 10 to DN 50

Temperatures
from -40°C to +120°C

Pressures
Inlet pressure up to 60 bar
Outlet pressure 0,5 to 50 bar

Materials

Media

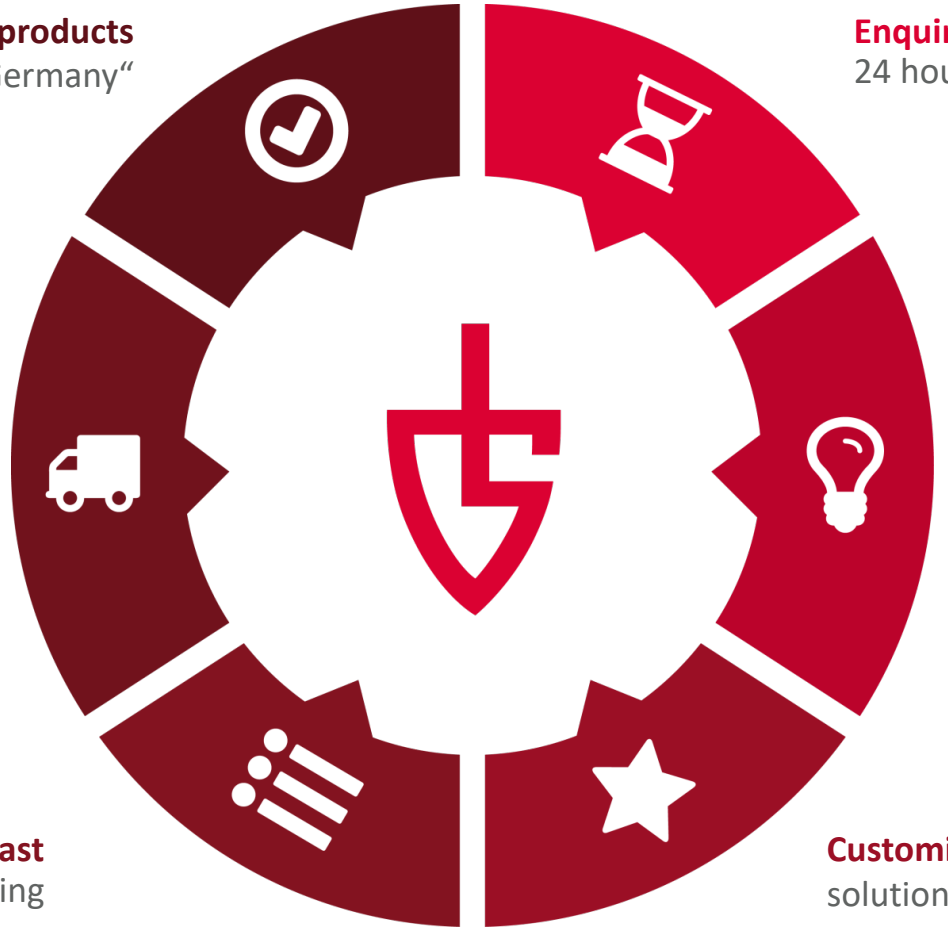
Applications:

- Gas pressure regulation
- Test rigs

Service competence of Goetze

All products
„Made in Germany“

Enquiries are processed within 24 hours.



Short delivery time
Within 3-5 working days „ex-works“

Technical advice
from competent contacts with know-how

Fast
ordering processing

Customized
solutions

Your personal contact

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