

REthink REnature

A Public Activity of Zoz Group



...where competences match



Zoz Group

Maltoz®-Strasse
D-57482 Wenden
Germany

www.zoz.de

Technical data and dimensions are subject to alteration.
nogo® | isigo® | Zentallium® | ZoLiBat® | H2Tank2Go® | Hydrolium®
are registered trademarks of Zoz Group.

www.zoz.de



THE THREE ANSWERS
FOR ZERO EMISSION FUTURE TRANSPORTATION

Zoz Light Weight Technology

Zentallium®

lighter than aluminium
and as strong as steel

Zoz Battery Technology

ZoLiBat®

Li-Ion batteries and electrode
materials manufacturing equipment

Zoz Hydrogen Technology

H2Tank2Go®

solid state absorber tank system,
low pressure, highest energy density



THE THREE ANSWERS

FOR ZERO EMISSION FUTURE TRANSPORTATION

Zoz light weight technology

Zentallium®

lighter than aluminium
and as strong as steel

Description

High performance semi-finished products and component parts of mechanically alloyed Al-based materials with sustainable grain-size reduction and strengthening utilizing Carbon Nanotube (CNTs) for commercial applications.

Advantages

- superlative specific strength
- advanced temperature resistance
- high stiffness
- conductivity properties coming soon
- corrosion resistance data coming soon

dimensions		
Ø	geometry	achievable length
Ø 10 mm		2,3 m
Ø 15 mm		1,0 m
Ø 20 mm		0,6 m
Ø 30 / 3 mm		0,7 m
Ø 20 x 5 mm		1,8 m

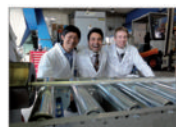
only Ø 15 mm available other coming soon



sample material available
(dimensions: Ø = 15mm,
length 150mm)

technical data and cost for Zentallium® Z21 - dimension Ø 15 mm							
specification	Al 1060	Al 5063 (H321)	Al 7075 (T651)	Al-Li 8090	Zentallium® Z21	Ti 6Al-4V	Stainless steel A2
tensile strength [MPa]	83	345	572	720	700	950	700
specific strength [NPa/gcm ³]	31	130	204	267	266	214	87,5
modulus of elasticity [GPa]	70	70,3	71,7	80	80	113,8	210
elongation [%]	16	10	11	4	1	14	8
density [g/cm ³]	2,7	2,66	2,81	2,7	2,63	4,43	8
net cost [€/m]	(7)	(15)	(37)	(100)	60*	(75)	(9)

* minima 30m per order, value 2011-05



annual manufacturing capability in pilot scale accounts to 3,2 km

Zoz battery technology

ZoLiBat®

high performance phosphate based
Li-Ion battery electrode materials

Description

High efficient cost effective lithium-ion battery-packs for electro kickboards/scooters isigo® 1.0-ZLB and longo® 1.0-ZLB and other application.



ZoLiBat®-battery pack
pack contains 14 single cells

safety tests	
short circuit test	no fire or explosion all tests passed
drop test	
overcharge test	
impact test	
nail penetration test	
crush test	
150°C high temperature test	
test certificates	coming soon

dimensions, technical data & cost	
dimensions (L x W x H)	300 x 80 x 110 mm
weight	4,8 kg
ambient temperature range (charge)	0 - 45°C
ambient temperature range (discharge)	-20 - 55°C
nominal capacity	10 Ah
nominal voltage	48 V
internal impedance	10 mOhm
max. charge voltage	57,4 V
cut off voltage	39,2 V
charge mode	CC/CV
max. charge current	10 A @ 1 C
max. charge current	30 A @ 3 C
max. discharge current (peak)	50 A
cycle life	350 times
net cost	402,52 € (value 05-2011)



isigo® 1.0-ZLB
(needs 1 ZoLiBat®-battery pack)



longo® 1.0-ZLB
(needs 4 ZoLiBat®-battery packs)

Zoz Hydrogen technology

H2Tank2Go®

solid state absorber tank system,
low pressure, highest energy density

Description

This is the prototype of the globally first ECONOMICAL hydrogen driven vehicle demonstrating super safe Zoz-Hydrogen-Technology. Zero emission is very nice but only cost and performance do decide.



isigo® H2.0 prototype



click 'n' go system
H2Tank2Go®

technical data, dimensions & cost		
isigo® H2.0	Prototype	commercial Product
available	yes	2012-07
max. speed	ca. 35 km/h ¹⁾	
range	max. 60 km ¹⁾	max. 120 km ¹⁾
drive-power	500 W	
converter	DC-DC (24V -> 48V)	
buffer micro-bat	Li-Ion, 48 V / 2,5 Ah	
brakes	disc brakes	
fuel-cell	PEM-FC, 320W (24 V)	
converter	DC-DC (24V -> 48V)	
operating pressure (tank)	< 10 bar	
refueling time	(Hydrollum®, solid state absorption) click 'n' go (60s) / click 'n' go (10s)	
pressure reducer	0,5 bar	
dimensions	1085 x 285 x 460 mm	
net weight [kg]	35	39
available colours	black	
on-road approval	no	yes
net cost	€ 5.000,00	€ 999,00

¹⁾ depends on riding, route and load

Why & What

In electro-hydrogen mobility world, much is promised and a lot expected. In order to prove that what you see is real at this cost, we already offer the prototypes at no warranty and at no approval. The prototype is available now, the commercial product as of 2012-07.

When

on-road approval expected:
for isigo® 1.0 within 2011
for H2Tank2Go® within 2011
for isigo® H2.0 as of 2012-07

