

GENIUS GROUP



powered by PyroBubbles®



**Germany
Land of Ideas**



Selected Landmark 2011

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The **GENIUS** Group

Day by day we work together with an experienced research and development team to achieve the best possible fire protection solution for our customer.

Since 2010, we have been constantly developing innovative solutions for fire protection, transport and storage of lithium-ion batteries/modules as well as special extinguishing systems for the highest demands. In doing so, we work permanently and closely with the responsible institutes and associations, such as BAM, MPA, Fraunhofer Institute and the OvGU Magdeburg.

Customers including Porsche, Mercedes Benz, Volkswagen, Zeppelin, Rimac, Maserati, Scania, Kuehne+Nagel and many more rely on our expertise.

We aim at finding a balance between ecology and cost-effectiveness for our customers, partners and employees and thus create a safe environment. We always focus on environmentally conscious thinking and acting.



As a manufacturer and marketer of sustainable innovative fire protection solutions, the **GENIUS Group** thus forms an important interface between research, science and industry.

We have the necessary legal certificates, the know-how and the resources to be able to cover all aspects for you in compliance with the law and reliably.

No matter what battery or module size you use or what branch you belong to. **GENIUS** has the right solution for you! As a part of our daily business we master the premium class for critically defective lithium-ion batteries/modules according to the latest ADR requirements for dangerous goods according to P911/P906, along with the approval for the storage and transportation of containers for those kind of batteries/modules.

We do not make any compromises when it comes to quality. Thanks to our QSP certification at BAM, we constantly maintain the required quality standards. At **GENIUS** quality is not made by external requirements, quality is made every day.

Take advantage of our expertise and join us as a long-term customer!



GENIUS Product portfolio

PyroBubbles®

The original and patented GENIUS extinguishing agent for flammable solids, liquids, battery fires, fire protection for buildings and specialty chemicals.

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Storage & Transport Plastic container

GENIUS transport and storage boxes for prototypes or defective batteries and modules.

(Packing group 2)

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Storage & Transport Metal container

GENIUS transport boxes for prototypes, defective or critically defective batteries and modules incl. BAM approval.

(Packing group 1)

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Storage

GENIUS Storage container for storage of defective and critically defective batteries and modules.

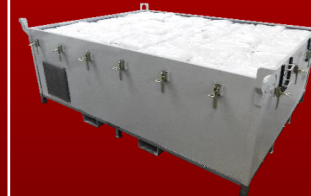
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Test Bench

GENIUS test bench container for the research and assessment of performance limits of lithium-ion batteries.

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Suitcase, Blanket, Bengalo

The fire protection case, the fire blanket and the Bengalo Safe from GENIUS as a safety product for smaller lithium-ion batteries and cells.

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The original and patented extinguishing agent *PyroBubbles*[®] from GENIUS

The patented GENIUS flame retardant *PyroBubbles*[®] is suitable for lithium-ion batteries, liquids, building fire protection, cable ducts and other flammable substances of all kinds[®]. In many fire tests and laboratory investigations, the *PyroBubbles*[®] from GENIUS have proven their high performance and are one of the best extinguishing medium for firefighting hazardous goods.

PyroBubbles[®] do more than just fight the fire, *PyroBubbles*[®] extinguish it!

- Approx. 8 - 10 times lighter than sand (approx. 235 kg/m³ and buoyant).
- Filtration and binding of electrolytes and liquids (BAM tested).
- Low thermal conductivity as well as electrically insulating.
- Thermal and chemical resistance (up to 1050°C).
- Specific heat capacity of only 0.7 kJ/(kg*K), porosity of 85%.
- Condensation of escaping vapors by the GENIUS *PyroBubbles*[®].
- Non-combustible building material (A1, DIN 4102, EN 13501).
- Protection of the battery or module from vibration by fixation.
- Available in bulk as well as in various PE bags.
- Not hazardous to health, maintenance-free and reusable.
- Approved as an extinguishing agent for lithium-ion batteries, liquids and any flammable substances (e.g. gasoline, magnesium) where water or other extinguishing agents do not have sufficient effect.
- 100% stocked, 100% ecological, 100% safe.

As a result of the extinguishing tests, it can be stated that all fire objects examined were successfully extinguished with *PyroBubbles* in a very short time. The suitability of the *PyroBubbles* for fire extinguishing purposes is hereby confirmed on the basis of the tests carried out.



Excerpt from various approvals

The original and patented extinguishing medium *PyroBubbles*[®] from GENIUS

Inerting:

The dense ball packing inhibits the transport of substances and effectively prevents the formation of flammable mixtures.

Cooling:

The granules absorb a lot of energy due to their specific thermal capacity. This reduces the temperature of escaping gases/vapours and prevents spontaneous combustion.

Condensation:

Vapors are cooled below their boiling point and condense on the granules.

Adsorption:

Vapours and liquids accumulate on the porous surface and can thus be disposed of in a bound manner.



Areas of application:

- Wherever flammable liquids and metal shavings are used.
- When it comes to preventing damage caused by extinguishing water.
- When fire loads cannot/should not be extinguished with water.
- For the permanent insulation of flammable substances/systems.
- For the safe transport of lithium-ion batteries/modules.
- Preventive fire protection in buildings and cable ducts.
- Gasoline, magnesium and oil fires as well as other highly flammable liquids and flammable substances.

Application examples:

- Production facilities
- Pumps and turbines
- Production machines
- Fats, oil, petrol
- Metalworking companies & specialty chemicals
- Electromobility (lithium-ion batteries/modules)
- Protection for storage tanks with flammable liquids
- Hardening baths
- Cable systems & transformers
- Transport of dangerous goods
- Foundries

Item no.	Product description	Unit	External dimension mm (LxWxH)
11 - PyroBubbles - Filling			
1101	Fire protection agent <i>PyroBubbles</i> Premium	1 Bag, 12,5 kg	770 x 420 x 130
1102	Fire protection agent <i>PyroBubbles</i> Premium	1 BigBag, 250 kg	1020 x 850 x 1200
1104	Fire protection agent <i>PyroBubbles</i> Pure-M	1 Bag, 12,5 kg	770 x 420 x 130
1105	Fire protection agent <i>PyroBubbles</i> Pure-M	1 BigBag, 250 kg	1020 x 850 x 1200
12 - PyroBubbles - Pouch			
1216	Filler pouch PE small, <i>PyroBubbles</i> Pure-M	VPE 50 pcs. (1 PE small= ca. 0,16 kg/pcs.= 0,7 Liter)	225 x 145 x 20
1217	Filler pouch PE large, <i>PyroBubbles</i> Pure-M	VPE 5 pcs. (1 PE large= ca. 1,76 kg/pcs. = 8 Liter)	404 x 371 x 52

GENIUS plastic transport container (PG 2)

The **GENIUS** plastic transport containers are defined for damaged and defective lithium-ion batteries/modules. The necessary safety (layer thickness on **PyroBubbles®**) depends on the cell chemistry, mass and condition of the batteries or modules. Filling and emptying processes are designed for easy handling.

We offer these security containers in three different packaging concepts:

1. An optimal safety level is ensured due to the powder-coated steel-made inner basket (**Advanced and Premium**). The load remains within the safety distances at all times, both to the outside of the container and to the bottom. The inner basket is permeable to any leaking electrolyte.
2. The **Basic** variant is only equipped with **GENIUS** filling pads and serves as minimal protection for the load.
3. The load of the **Advanced** model can easily be removed together with the basket. The **PyroBubbles®** remain in the box as bulk goods.

Cushions are used in the **Basic** and **Premium** models. These cushions are surrounded by thin, needle-punched polyethylene (PE) film and filled with **PyroBubbles®**. If necessary (thermal runaway), the film dissolves and the extinguishing medium **PyroBubbles®** unfolds its full effect.

- Safety system for storage and transport according to ADR SV376 according to, P903, P908, P909, P910 for defective lithium-ion batteries/modules.
- E-bike batteries, power tools, laptop and mobile batteries, automotive batteries, etc.
- Transport of prototypes according to SV310, P910.
- Reliable protection against thermal runaway and exothermic reaction.
- Standard sizes for easy logistics, stackable multiple times up to 3.0 meters.
- Tested boxes with UN approvals.
- Permanent reuse of the system.
- Simplest handling and no danger to the environment.



GENIUS
XS-Box 1 Basic



GENIUS
XS-Box 1 Premium



GENIUS
M-Box Advanced

GENIUS plastic transport container (PG 2)

Item no.	Product description	Box content	External dimension mm (LxWxH)	Internal dimension mm (LxWxH)	Volume Liter	Empty weight (mass in kg)	Total weight incl. <i>PyroBubbles</i> (mass in kg)	Max. total weight (gross mass in kg)	Max. dangerous goods mm (LxWxH)
22 - Plastic transport container - PG2									
2209	XS-Box 1 Basic , incl. <i>PyroBubbles</i>	18 PE-filler pouch small	400 x 300 x 233	358 x 258 x 177	18	1,9	5	13	300 x 200 x 135
2210	XS-Box 1 Advanced , incl. <i>PyroBubbles</i>	1 bag PB, basket open	400 x 300 x 233	298 x 198 x 135	8	3,7	8	13	296 x 196 x 133
2213	XS-Box 1 Premium , incl. <i>PyroBubbles</i>	8 PE-filler pouch small, basket closed	400 x 300 x 233	298 x 191 x 125	7	7,4	9	13	296 x 189 x 123
2211	XS-Box 2 Basic , incl. <i>PyroBubbles</i>	23 PE-filler pouch small	400 x 300 x 285	253 x 253 x 228	20	2	6	13	300 x 200 x 185
2212	XS-Box 2 Advanced , incl. <i>PyroBubbles</i>	1 bag PB, basket open	400 x 300 x 285	297 x 191 x 190	11	4	9	13	295 x 189 x 188
2201	S-Box 1 Basic , incl. <i>PyroBubbles</i>	45 PE-filler pouch small	600 x 400 x 293	558 x 258 x 235	47	3,5	11	X: 30 / Y:45	496 x 296 x 216
2202	S-Box 1 Advanced , incl. <i>PyroBubbles</i>	1 bag PB, basket open	600 x 400 x 293	492 x 292 x 196	28	6,9	19	X: 30 / Y:45	490 x 290 x 194
2203	S-Box 1 Premium , incl. <i>PyroBubbles</i>	30 PE-filler pillow pouch, basket closed	600 x 400 x 293	492 x 292 x 196	28	19,2	24	X: 30 / Y:45	490 x 290 x 194
2204	S-Box 2 Basic , incl. <i>PyroBubbles</i>	85 PE-filler pouch small	600 x 400 x 441	556 x 356 x 422	84	4,7	19	X: 30 / Y:45	496 x 296 x 380
2205	S-Box 2 Advanced , incl. <i>PyroBubbles</i>	2 bag PB, basket open	600 x 400 x 441	492 x 292 x 341	49	9	30	X: 30 / Y:45	490 x 290 x 339
2206	S-Box 2 Premium , incl. <i>PyroBubbles</i>	55 PE-filler pouch small, basket closed	600 x 400 x 441	492 x 292 x 341	49	22	31	X: 30 / Y:45	490 x 290 x 339
2216	M-Box Basic , incl. <i>PyroBubbles</i>	75 PE-filler pouch large	1200 x 1000 x 845	1120 x 920 x 600	600	55	187	456	1060 x 860 x 540
2207	M-Box Advanced , incl. <i>PyroBubbles</i>	12 bag PB, basket open	1200 x 1000 x 845	966 x 766 x 404	299	80,5	231	456	964 x 764 x 402
2208	M-Box Premium , incl. <i>PyroBubbles</i>	45 PE-filler pouch large, basket closed	1200 x 1000 x 845	981 x 788 x 400	309	172	252	456	979 x 786 x 398

Variant **Basic**



Variant **Advanced**



Variant **Premium**



FLEX-Line The foldable plastic container from GENIUS (PG 2)

Safely pack and transport hazardous goods – with **GENIUS**.

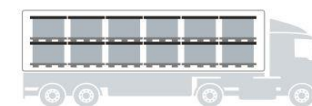
Whether by sea, air, rail or road: With our foldable plastic hazardous goods packaging, hazardous goods are safely packed and transported. In addition to our extensive standard range of large load carriers, we also develop individual solutions according to the special safety requirements of your industry.

FLEX-Line folding systems are foldable large load carriers made of plastic that meet all the requirements of modern and environmentally friendly transport and warehouse logistics. Due to a special construction, consisting of a twin sheet pallet, folding ring and twin sheet lid, they are light and yet very stable. They are ergonomic and safe to handle, have a long service life and can be completely recycled at the end of use. For storage and transport of empties, the large load carriers can be folded up to save space.

To help you find the right type of packaging for your dangerous goods, such as lithium-ion batteries, battery cells or battery modules, we offer the **FLEX-Box** in three different variants. The **Basic** module/version for simple conditions the **Advanced** version which is equipped with an E-glass fibre needle mat and the **Premium** variant for maximum protection.

- Safety system for storage and transport according to ADR LP903, LP904, LP905 and P903, P908, P909, P910 for damaged and defective lithium-ion batteries/modules and prototypes.
- E-bike batteries, power tools, laptop and mobile batteries, automotive batteries, etc.
- Recess for barcode sticker and attachment of document register.
- Insertion of a GPS chip in the pallet base possible.
- Standard sizes for easy logistics, foldable and extremely light weight.
- Tested boxes with UN approvals and sliding element with dangerous goods symbol.
- Permanent reuse of the system (no replacement necessary after 5 years).
- Simplest handling and no danger to the environment.

Up to **85% volume reduction** for empties return and storage !!



Outward transport
52 full FLEX-boxes
1200 x 1000 x 990 mm



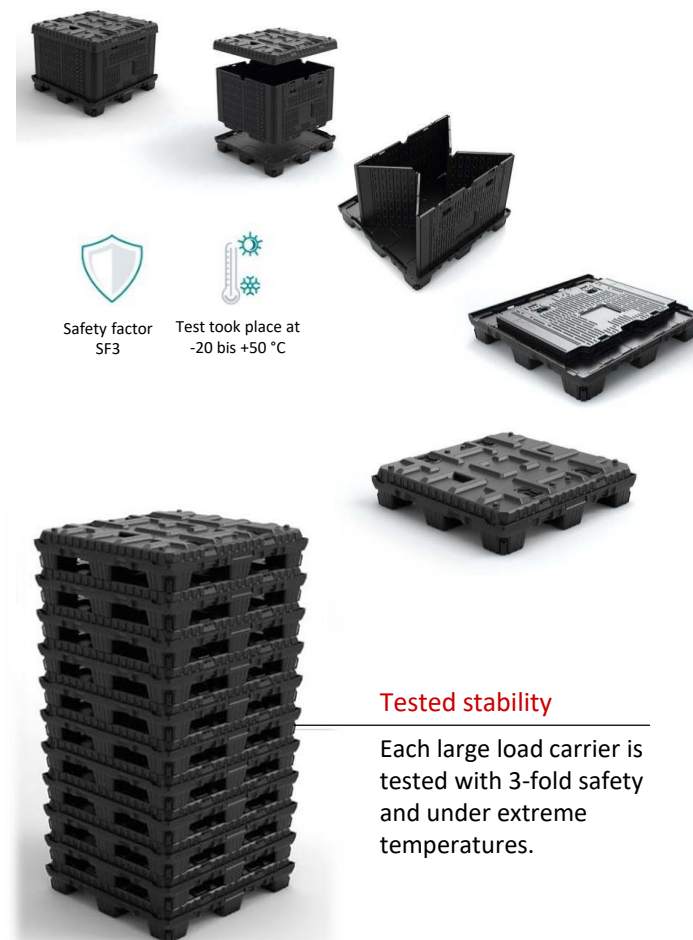
Return transport
382 empty FLEX-boxes
1200 x 1000 x 990 mm



FLEX-Line The foldable plastic container from GENIUS (PG 2)

Product description	Lithium-Ion battery GENIUS FLEX-BOX 240 Basic	Lithium-Ion battery GENIUS FLEX-BOX 240 Advanced	Lithium-Ion battery GENIUS FLEX-BOX 240 Premium
Item number	2219	2220	2221
			
Volume	240 Liter	240 Liter	240 Liter
Max. total weight	438 kg	438 kg	438 kg
External dimension (LxWxH)	1140 x 595 x 635 mm	1140 x 595 x 635 mm	1140 x 595 x 635 mm
Internal dimension (LxWxH)	1060 x 515 x 443 mm	1060 x 515 x 443 mm	1060 x 515 x 443 mm
Empty weight	38 kg	38 kg	38 kg
Material	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic
Foldable	Yes	Yes	Yes
Height folded	276 mm	420 mm	420 mm
Filling material	without	E-glass fibre needle mats	E-glass fibre needle mats incl. 28 <i>PyroBubbles</i> -pouches PE large
Active fire retardant with filter effect	No	No	28 <i>PyroBubbles</i> -pouches PE large for higher fire protection (approx. 50 kg)
Approved for the following battery types	For undamaged and non-defective batteries as well as for prototypes	For damaged & defective batteries, prototypes & for disposal or recycling	For damaged & defective batteries, prototypes & for disposal or recycling
Packing instruction	P903	P903, P908, P909, P910	P903, P908, P909, P910
ADR special provisions	-	SV310, SV376, SV377	SV310, SV376, SV377

22 - foldable transport container plastic - VG 2



FLEX-Line The foldable plastic container from GENIUS (PG 2)

Product description	Lithium-Ion battery GENIUS FLEX-BOX 625 Basic	Lithium-Ion battery GENIUS FLEX-BOX 625 Advanced	Lithium-Ion battery GENIUS FLEX-BOX 625 Premium	Lithium-Ion battery GENIUS FLEX-BOX 790 Basic	Lithium-Ion battery GENIUS FLEX-BOX 790 Advanced	Lithium-Ion battery GENIUS FLEX-BOX 790 Premium
Item number	2222	2223	2224	2225	2226	2227
						
Volume	625 Liter	625 Liter	625 Liter	790 Liter	790 Liter	790 Liter
Max. total weight	656 kg	656 kg	656 kg	850 kg	850 kg	850 kg
External dimension (LxWxH)	1200 x 800 x 923 mm	1200 x 800 x 923 mm	1200 x 800 x 923 mm	1200 x 1000 x 1000 mm	1200 x 1000 x 1000 mm	1200 x 1000 x 1000 mm
Internal dimension (LxWxH)	1134 x 734 x 752 mm	1134 x 734 x 752 mm	1134 x 734 x 752 mm	1092 x 892 x 812 mm	1092 x 892 x 812 mm	1092 x 892 x 812 mm
Empty weight	56 kg	56 kg	56 kg	57 kg	57 kg	57 kg
Material	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic
Foldable	Yes	Yes	Yes	Yes	Yes	Yes
Height folded	260 mm	404 mm	404 mm	276 mm	420 mm	420 mm
Filling material	without	E-glass fibre needle mats	E-glass fibre needle mats incl. 75 PyroBubbles -pouches PE large	without	E-glass fibre needle mats	E-glass fibre needle mats incl. 90 PyroBubbles -pouches PE large
Active fire retardant with filter effect	No	No	75 PyroBubbles -pouches PE large for higher fire protection (approx. 132 kg)	No	No	90 PyroBubbles -pouches PE large for higher fire protection (approx. 160 kg)
Approved for the following battery types	For undamaged and non-defective batteries as well as for prototypes	For damaged & defective batteries, prototypes & for disposal or recycling	For damaged & defective batteries, prototypes & for disposal or recycling	For non-damaged and non-defective batteries as well as prototypes	For damaged & defective batteries, prototypes & for disposal or recycling	For damaged & defective batteries, prototypes & for disposal or recycling
Packing instruction	LP903	LP903, LP904, LP905	LP903, LP904, LP905	LP903	LP903, LP904, LP905	LP903, LP904, LP905
ADR special provisions	-	SV310, SV376, SV377	SV310, SV376, SV377	-	SV310, SV376, SV377	SV310, SV376, SV377

22 - foldable transport container plastic - VG 2

FLEX-Line The foldable plastic container from GENIUS (PG 2)

Product description	Lithium-Ion battery GENIUS FLEX-BOX 975 Basic	Lithium-Ion battery GENIUS FLEX-BOX 975 Advanced	Lithium-Ion battery GENIUS FLEX-BOX 975 Premium	Lithium-Ion battery GENIUS FLEX-BOX 1580 Basic	Lithium-Ion battery GENIUS FLEX-BOX 1580 Advanced	Lithium-Ion battery GENIUS FLEX-BOX 1580 Premium
Item number	2228	2229	2230	2231	2232	2233
						
Volume	975 Liter	975 Liter	975 Liter	1580 Liter	1580 Liter	1580 Liter
Max. total weight	835 kg	835 kg	835 kg	800 kg	800 kg	712 kg
External dimension (LxWxH)	2250 x 1140 x 635 mm	2250 x 1140 x 635 mm	2250 x 1140 x 635 mm	1700 x 1140 x 1157 mm	1700 x 1140 x 1157 mm	1700 x 1140 x 1157 mm
Internal dimension (LxWxH)	2140 x 1030 x 443 mm	2140 x 1030 x 443 mm	2140 x 1030 x 443 mm	1590 x 1030 x 965 mm	1590 x 1030 x 965 mm	1590 x 1030 x 965 mm
Empty weight	85 kg	85 kg	85 kg	88 kg	88 kg	88 kg
Material	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic	HDPE rigid plastic
Foldable	Yes	Yes	Yes	Yes	Yes	Yes
Height folded	276 mm	420 mm	420 mm	276 mm	420 mm	420 mm
Filling material	without	E-glass fibre needle mats	E-glass fibre needle mats incl. 110 PyroBubbles -pouches PE large	without	E-glass fibre needle mats	E-glass fibre needle mats incl. 185 PyroBubbles -pouches PE large
Active fire retardant with filter effect	No	No	110 PyroBubbles -pouches PE large for higher fire protection (approx. 195 kg)	No	No	185 PyroBubbles -pouches PE large for higher fire protection (approx. 326 kg)
Approved for the following battery types	For undamaged and non-defective batteries as well as for prototypes	For damaged & defective batteries, prototypes & for disposal or recycling	For damaged & defective batteries, prototypes & for disposal or recycling	For undamaged and non-defective batteries as well as for prototypes	For damaged & defective batteries, prototypes & for disposal or recycling	For damaged & defective batteries, prototypes & for disposal or recycling
Packing instruction	LP903	LP903, LP904, LP905	LP903, LP904, LP905	LP903	LP903, LP904, LP905	LP903, LP904, LP905
ADR special provisions	-	SV310, SV376, SV377	SV310, SV376, SV377	-	SV310, SV376, SV377	SV310, SV376, SV377

22 - foldable transport container plastic - VG 2

GENIUS transport container made of stainless steel for critically defective batteries/modules (PG 1)

The **GENIUS** stainless steel transport containers are the ideal solution for users who are looking for a reliable way to transport or store lithium-ion batteries, battery modules or cells of the UN3090, UN3091, UN3480, UN3481 regulations in compliance with the latest safety standards. In addition to intact lithium-ion batteries/modules, the **GENIUS** transport containers are particularly suitable for critically defective batteries/modules, which are a significant source of danger both during transport and storage.

Through years of development work, these boxes have become one of the safest transport and storage options on the market.

Thanks to a large number of fire tests, the **GENIUS** transport containers have all the necessary approvals according to P911 and LP906.



GENIUS
XXL-Box E



GENIUS
M-Box X1 E

- Safety system for storage and transport according to ADR according to P911, LP906 for damaged and critically defective lithium-ion batteries/modules.
- Safest protection against thermal runaway or exothermic reaction.
- Steel containers in various sizes from S to XLP, stackable.
- Tested boxes with UN approvals according to:
 - ADR (for street)
 - RID (for rail)
 - IMDG (for sea)
- Permanent reuse of the system.
- Easy handling and safe operation.
- Transport and storage containers up to 1000 kg, as well as custom-made products.
- Approvals are available with over 40 fire tests.

The temperatures of the outer walls remain well below 100°C, even during and after a thermal runaway of the battery. The system prevents flames and projectiles from escaping. Special valves and the extinguishing agent **PyroBubbles®** filter toxins and contain the fire or, in the best case, extinguish it completely.

The transport containers can be filled with **PyroBubbles®** bulk material as well as with cushions. All transport containers can also be used as storage containers.

GENIUS transport container for critically defective batteries/modules (PG 1)

Item no.	Product description	Box content	External dimension mm (LxWxH)	Internal dimension mm (LxWxH)	Volume Liter	Empty weight (mass in kg)	Max. total weight (gross mass in kg)	Max. dangerous goods mm (LxWxH)	Max. load dangerous goods (net mass in kg)
21 - Transport container stainless steel - PG1									
2122	S-Box X1 E, incl. <i>PyroBubbles</i> Premium	4 bag PB	800 x 600 x 756	674 x 474 x 573	185	69	207	374 x 174 x 273	85
2125	S-Box X2 E, incl. <i>PyroBubbles</i> Premium	6 bag PB	800 x 600 x 1136	674 x 474 x 953	305	83	303	374 x 174 x 653	165
2124	M-Box X1 E, incl. <i>PyroBubbles</i> Premium	10 bag PB	1200 x 800 x 812	1076 x 676 x 650	463	115	430	776 x 376 x 350	200
2118	M-Box X2 E, incl. <i>PyroBubbles</i> Premium	16 bag PB	1200 x 800 x 1278	1076 x 676 x 1100	800	140	701	776 x 376 x 800	400
2120	XXL-Box E, incl. <i>PyroBubbles</i> Premium	50 bag PB	2572 x 1556 x 1108	2376 x 1360 x 839	2603	400,0	1738	2076 x 1060 x 539	550
2126	XXL-Box E with inner box E, incl. <i>PyroBubbles</i> Premium	20 bag PB, permanent filling, Inner box	2572 x 1556 x 1108	2070 x 1060 x 540	1185	520	1738	870 x 860 x 440	550
2131	LP-Box ² X1 E, incl. <i>PyroBubbles</i> Premium (double-walled)	55 bag PB, permanent filling	3175 x 2400 x 1349	2670 x 1900 x 590	2993	2552	3960	2470 x 1700 x 490	800
2132	LP-Box ² X2 E, incl. <i>PyroBubbles</i> Premium (double-walled)	98 bag PB, permanent filling	3180 x 2360 x 1250	2932 x 2112 x 780	4850	2150	3960	2732 x 1912 x 584	800
2129	XLP-Box ² E, incl. <i>PyroBubbles</i> Premium (double-walled)	in development							

26 - Transport container blacksteel - PG1									
2603	S-Box X1 B, incl. <i>PyroBubbles</i> Premium (galvanized)	4 bag PB	800 x 600 x 744	678 x 478 x 580	188	47	184	378 x 178 x 280	85
2605	M-Box X1 B, incl. <i>PyroBubbles</i> Premium (galvanized)	9 bag PB	1200 x 800 x 790	1046 x 646 x 625	422	100	387	746 x 346 x 325	200
2607	XXL-Box B, incl. <i>PyroBubbles</i> Premium (galvanized)	55 bag PB	2500 x 1500 x 1230	2336 x 1336 x 926	2890	538	1870	2036 x 1036 x 626	550
2608	LP1-Box Classic B, incl. <i>PyroBubbles</i> Premium (galvanized)	60 bag PB	2835 x 2135 x 957	2159-2699 x 1460-2000 x 570	2990	736	2024	2400 x 1700 x 370	842
2609	LP1-Box Basic B, incl. <i>PyroBubbles</i> Premium (galvanized)	400 PE-filler pouch large	2835 x 2135 x 957	2159-2699 x 1460-2000 x 570	2990	736	2024	2400 x 1700 x 370	842
2610	LP-Box ² B, incl. <i>PyroBubbles</i> Premium (galvanized & double-walled)	in development							
2611	XLP-Box ² B, incl. <i>PyroBubbles</i> Premium (galvanized & double-walled)	in development							

Together with various partners, we carry out certified fire tests and can therefore also quickly implement special boxes and qualify them for approval. The GENIUS Group has its own procedure specification at BAM so that you can safely transport even critically defective batteries.

GENIUS Storage Box as storage containers

The increasing energy density of lithium-ion batteries/modules and the inexorable use of these energy sources in all industrial sectors inevitably lead to significantly greater hazard potentials such as transport damage, spontaneous ignition potential, production damage, returns, etc.

The double-walled metal special containers are filled with **PyroBubbles®**. The lid is also securely protected by a **PyroBubbles®** permanent filling. Even lithium-ion batteries/modules in cartons or other storage units can be safely stored in these containers quickly and easily. The lithium-ion batteries/modules are also protected from external influences. The condition of the battery or module does not matter, even critically defective batteries can be stored.

The **GENIUS** Storage System provides a simple, weather-resistant, safe and flexible solution for storing lithium-ion batteries/modules for all industrial sectors. Elaborate separate fire protection containers and halls, as well as special shelters, are thus superfluous.

The **GENIUS** Storage Boxes are available in different sizes. Special sizes can be individually designed by **GENIUS**, according to your needs and requirements.



Item no.	Product description	Box content	External dimension mm (LxWxH)	Internal dimension mm (LxWxH)	Volume Liter	Empty weight (mass in kg)	Max. total weight (gross mass in kg)	Max. dangerous goods in mm (LxWxH)
23 - Storage box								
2306	Storage Box 30 B, incl. PyroBubbles	2 PE-filler pouch large, permanent filling	600 x 400 x 750	488 x 334 x 590	30	78	178	363 x 213 x 395
2307	Storage Box 90 B, incl. PyroBubbles	4 PE-filler pouch large, permanent filling	805 x 605 x 750	691 x 536 x 595	90	131	431	563 x 413 x 395
2308	Storage Box 220 B, incl. PyroBubbles	8 PE-filler pouch large, permanent filling	1216 x 805 x 750	1133 x 690 x 595	220	217	617	1013 x 563 x 395
2309	Storage Box 280 B, incl. PyroBubbles	16 PE-filler pouch large, permanent filling	1216 x 1006 x 750	1030 x 894 x 598	280	251	651	1013 x 743 x 373
2310	Storage Box 520 B, incl. PyroBubbles	45 PE-filler pouch large, permanent filling	1680 x 1480 x 882	1562 x 1362 x 700	520	568	968	1247 x 1047 x 400

➔ From Storage 90 onwards, all boxes are also available with a roller set or roller frame!

GENIUS Test Bench as a test bench container

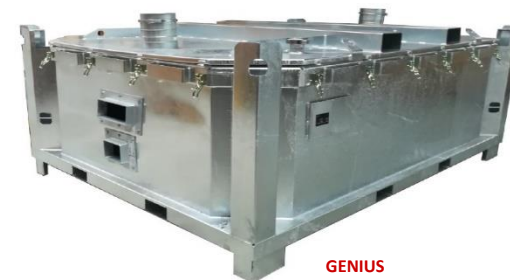
Of course, **GENIUS** also offers test bench containers for lithium-ion batteries/modules as a supplementary range of products. Years of experience with real fire tests of lithium-ion batteries/modules of all sizes in the field of electromobility play a decisive role in this.

The tailor-made test bench containers are used for research and the determination of performance limits of the latest lithium-ion batteries/modules in the electrical and automotive industries. All containers are made of steel or stainless steel. At the same time, the Test Bench can also be used as a storage container.

Individual cable grommets, flue gas extractors, water and compressed air connections as well as other connections defined according to customer requirements are of course feasible.



GENIUS
Test Bench 4200



GENIUS
Test Bench
Custom made



GENIUS
Test Bench 4200 with
trolley function

Item no.	Product description	External dimension mm (LxWxH)	Internal dimension mm (LxWxH)	Volume Liter	Empty weight (mass in kg)	Max. total weight (gross-mass in kg)
25 - Test Bench container						
2502	Test Bench 800 E, without filler	1200 x 800 x 1278	1076 x 676 x 1100	800	140	701
2506	Test Bench 1000 E, without filler	1800 x 800 x 1016	1676 x 676 x 838	950	175	800
2505	Test Bench 2100 B, without filler	2105 x 1100 x 1120	2030 x 1095 x 940	2089	327	827
2503	Test Bench 4200 B, without filler	2835 x 2135 x 1242	2640 x 2000 x 800	4224	585	2585
2501	Test Bench 4500 B, without filler	2835 x 2135 x 1242	2159-2699 x 1460-2000 x 855	4491	807	2807
2504	Test Bench 4900 B, without filler	2935 x 2135 x 1287	2258-2800 x 1460-2000 x 900	4930	971	2971

➔ Each Test Bench is also available with a roller set or roller frame!

GENIUS fire blanket BSD-1 and BSD-1P

We have developed the new fire protection blanket BSD-1 and BSD-1P according to the highest safety standards for the insulation and containment of fires.

Due to the special material and the integrated **PyroBubbles®** temperatures of well over 1000°C can be permanently managed. Cell explosions, which lead to dangerous situations in the event of battery/accumulator fires, are also safely protected with the fire protection blanket from **GENIUS**. Thanks to its compact size, low weight and easy handling, the blanket can easily be used by a single person in the event of a fire. Because your safety is important to us!

Maximum SAFETY in case of fire

Lithium-ion battery fires continue to remain a major challenge for people and the environment. Traditional fire extinguishers have great difficulty in the event of fires with these energy sources.

The **GENIUS** fire blanket is the simplest, simplest and most effective way to isolate fires with lithium-ion batteries. Lithium-ion batteries will be indispensable in all industrial and residential applications in the coming years. By purchasing this fire protection blanket, you protect yourself against major financial damage right from the start.

- Extremely flame retardant.
- Very low weight.
- Easiest handling.
- Explosionsschutz durch PyroBubbles.
- Dust- and waterproof.
- Can be used indoors.
- Free of hazardous substances.
- For fires of any kind.
- Maintenance free.
- High tear strength.
- Quickly ready for use.
- Continuous temperature up to 1000°C.
- Best price performance ratio.



DISCOVER THE WORLD OF PYROBUBBLES

GENIUS GROUP

Innovative ideas for fire protection, fire prevention and extinguishing systems

BSD-1P
The new fire protection blanket from GENIUS

Fires of lithium-ion accumulators and batteries continue to be a major challenge to people and the environment. Traditional fire extinguishers have great difficulty with fires involving these energy sources. Our fire blanket is the correct, easiest and most effective way to isolate fires involving lithium-ion batteries. Lithium-ion batteries will be indispensable in all industrial and private applications in the coming years. By purchasing the fire protection blanket, you protect yourself from major financial damage right from the beginning.

TECHNICAL DETAILS	CONVINCING ADVANTAGES
Dimensions L x W	1400 x 1000 mm *
Weight	4 kg†
Material	Special E-glass
Color	Pink
Filling	PyroBubbles
Medium	For fires of all kinds
product type	Fire protection blanket
Handling	Portable with velcro fastening
Maintenance	Free†
Article no.	2904
	*norm. value
	†without taxes

extremely flame retardant
 very low weight
 easy handling
 explosion protection due to PyroBubbles
 dust and water proof
 can be used indoors
 free of hazardous substances
 for fires of any kind
 maintenance free
 high tear resistance
 quickly ready for use
 permanent temperature up to 1000 °C
 best price-performance ratio

www.genius-group.de

GENIUS Bengalo Safe

The Bengalo Safe consists of a specially designed protective container filled with **PyroBubbles®**.

The Bengali torch is picked up and pressed into the Bengalo safe. The torch is suffocated by the extinguishing agent **PyroBubbles®**. All that remains is a securely packed and burnt-out "Bengalo". Due to the light weight and the two carrying handles, the container can be transported safely and quickly.

Uncontaminated **PyroBubbles®** can be reused without any problems and are completely maintenance-free.



Advantage

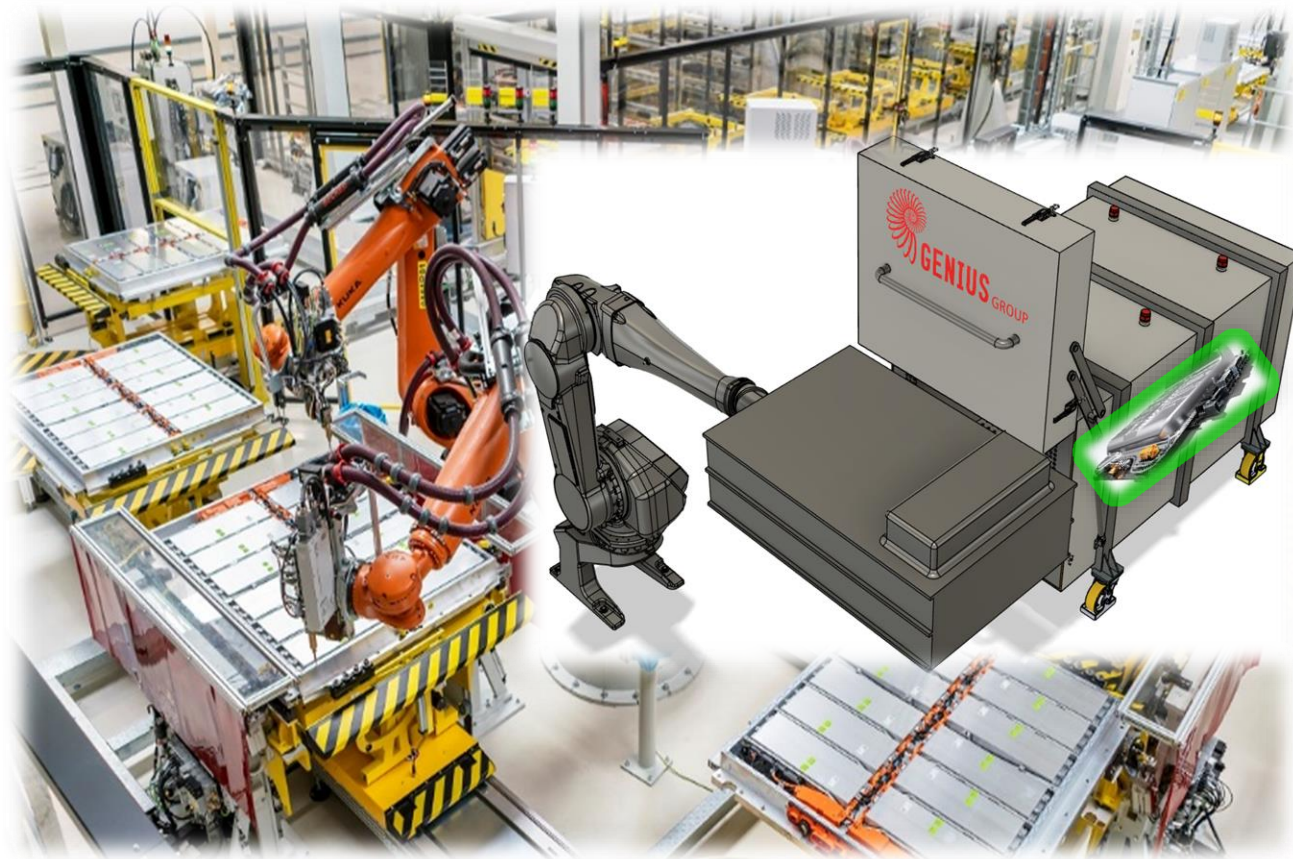
- Easy-to-transport containers.
- Instant isolation of the 2000°C hot torch.
- Protection against burns and smoke.
- Safe storage without risk of fire spread and injury.
- No risk of re-ignition.
- Reusable and environmentally friendly.
- Aging resistant.
- Easy operation.

The perfect protection in stadiums, for pyrotechnicians and at events with fireworks. Well-known football clubs have been relying on our technology and products for several years.



Item no.	Product description	Box content	External dimension mm (LxWxH)	Internal dimension mm (LxWxH)	Volume Liter	Empty weight (mass in kg)
24 - Bengalo Safe						
2401	Bengalo Safe, incl. PyroBubbles	Fire protection board, PyroBubbles	595 x 390 x 380	565 x 360 x 330	67	5,9

GENIUS development



GENIUS development

From special solution to automation or any other individual customer requirements – we are happy to develop them for you. In close cooperation with you or your team, we identify your exact requirements and bring efficiency, profitability and safety in balance.

With our own design and development department at GENIUS, we can act quickly at any time, implement special solutions and thus respond to your needs. Using state-of-the-art 3D software, we create various solutions for you. You as our customer are our top priority. We develop high-quality products for you in terms of cost efficiency and safety.

Please feel free to contact us!

GENIUS explains the packaging categories and UN labelling

Hazardous goods are divided into three packaging groups:

Risk	Packaging category	Performance group packaging (coding)
High danger	PG I	X
Medium danger	PG II	Y
Low danger	PG III	Z

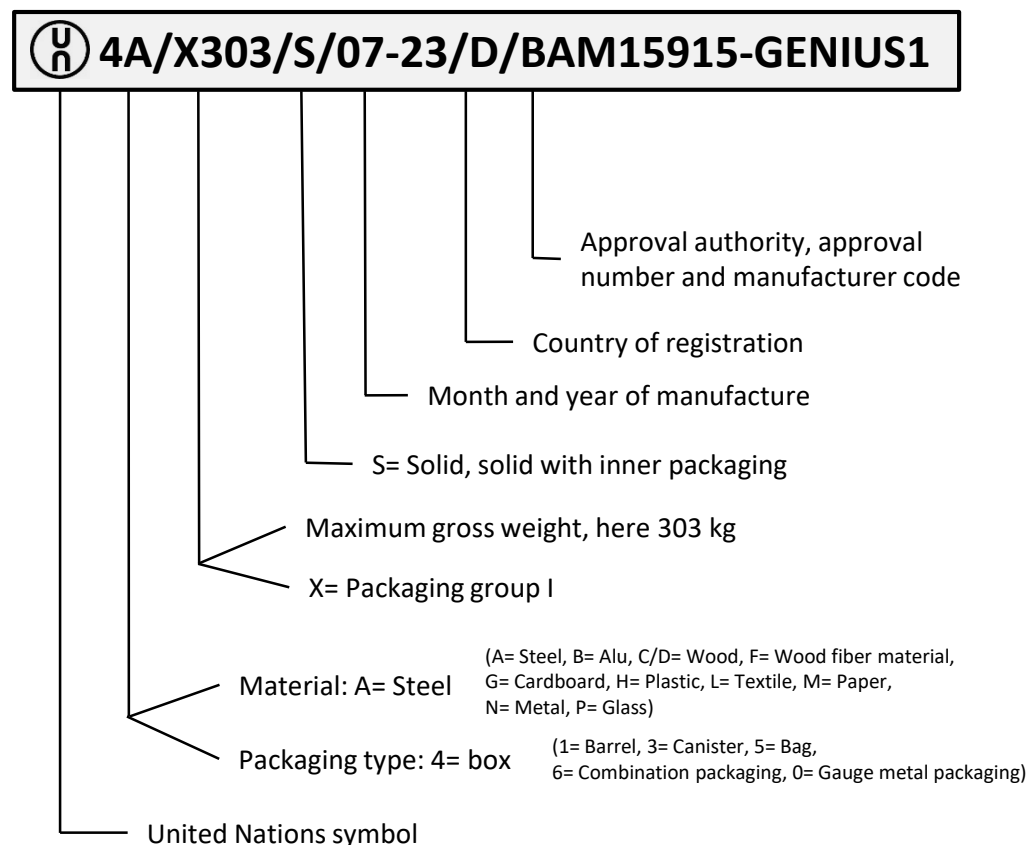
Packaging categories I, II, III refer to the substances which are packaged. The packaging categories were given the letters X, Y or Z, to indicate the permitted packaging type.

Substances of **packaging category I (high danger)** may only be packed in hazardous goods packagings with the UN marking **UN-X**.

Substances of **packaging category II (medium danher)** may only be packed in hazardous goods packagings with the UN marking **UN-Y**.

Substances of **packaging category III (low danger)** may only be packed in hazardous goods packagings with the UN marking **UN-Z**.

The use of a higher coded packaging group is permitted!



GENIUS decision-making aids for packaging and transport

Initial situation:

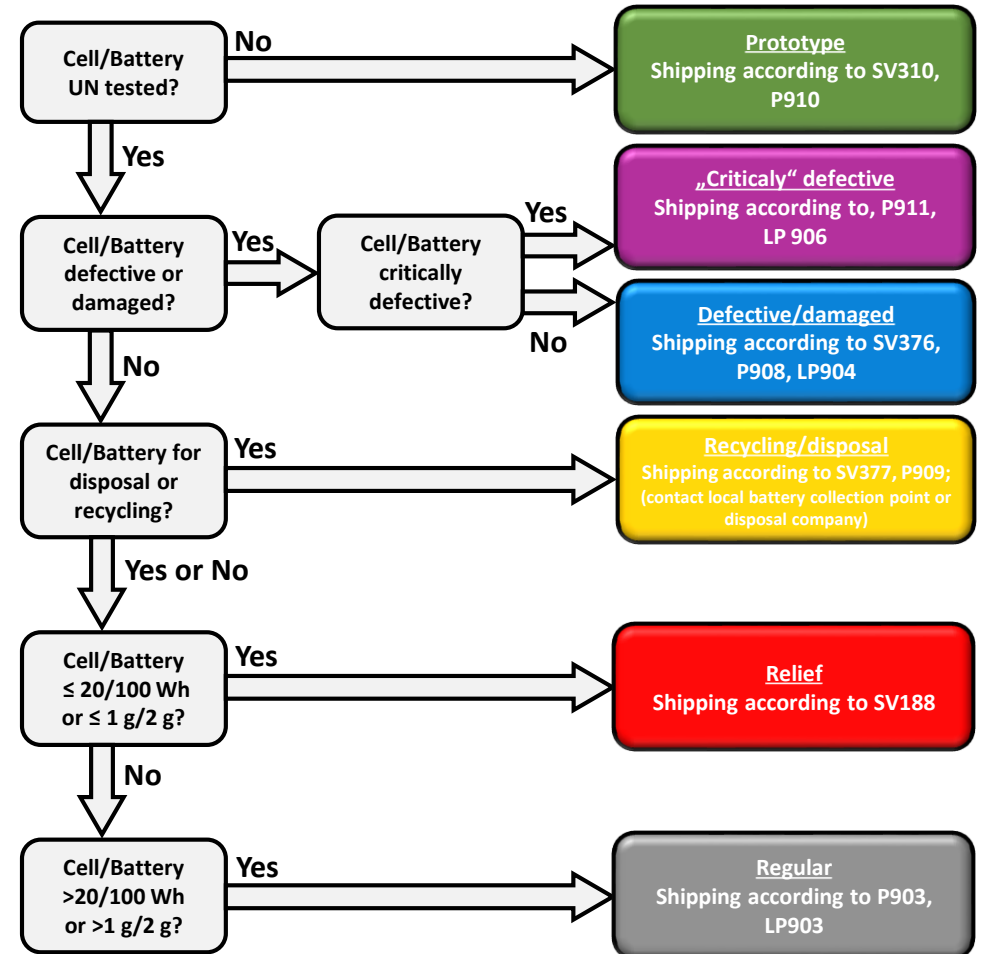
You come from the logistics sector and are interested in containers for the transport and/or storage of lithium-ion batteries/modules. They have different states and are not critically defective. Based on this initial information, we could give you a first assessment. First of all, it is important to find out roughly about the various regulations and battery/module conditions. Likewise, whether the battery or the module is UN tested or not. Performance as well as size and weight also play a decisive role. These points are crucial later when selection the container as well as in terms of shipping and packaging regulations.



A "critically" defective lithium-ion battery or module may only be transported with a specially certified and tested container that is adapted to the exact performance data. Please feel free to contact us!

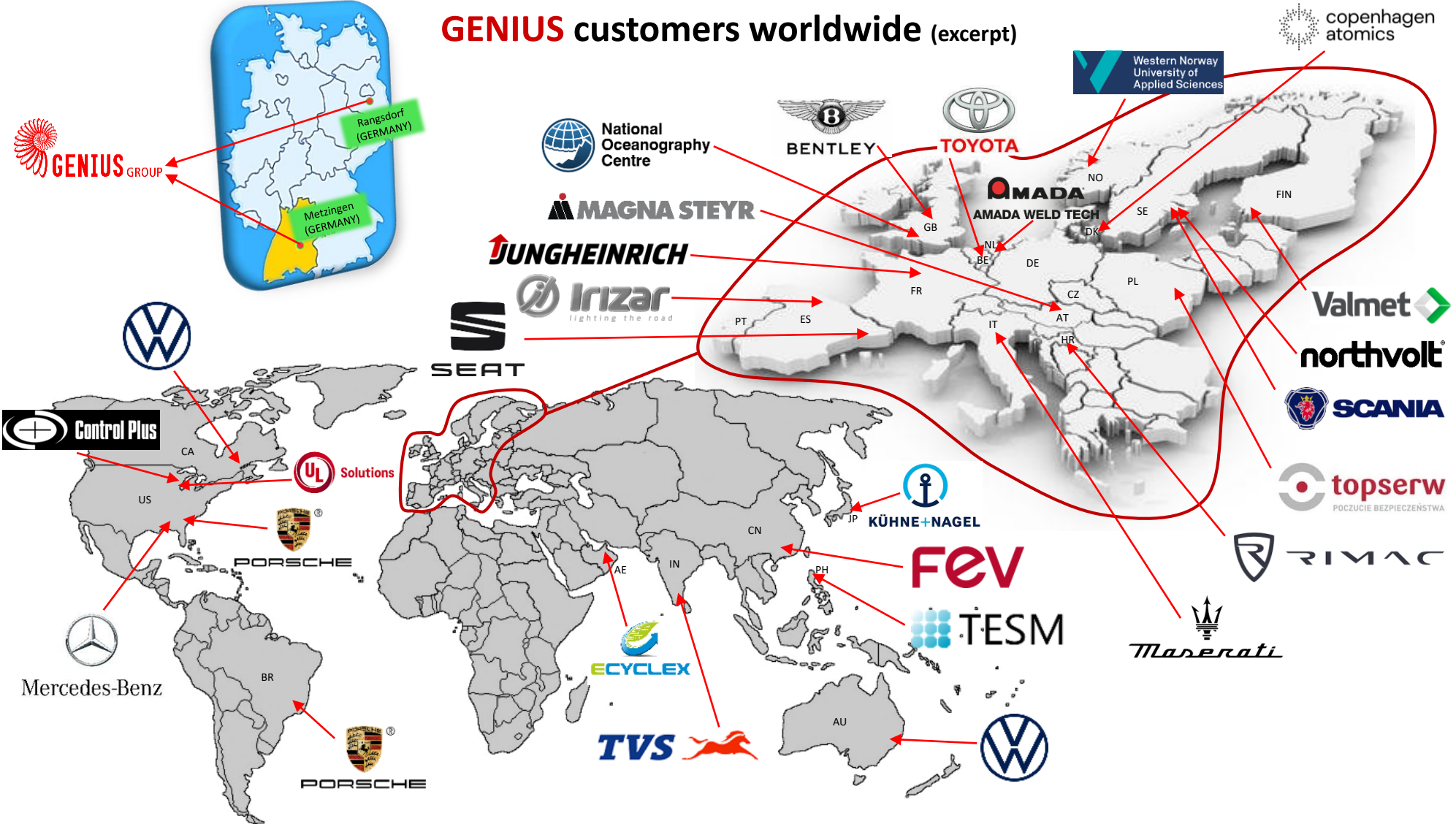
Safe shipping of lithium-ion batteries/modules by road, rail and sea: We have provided a chart to help you classify the kind of battery or module. The following pages show the respective regulations for each color.

In case of doubt, the classification of whether a battery or module is defective or critically defective must be carried out by an expert, the manufacturer or a qualified person.



Defective/damaged according to SV 376, P 908, LP 904	Critically defective according to SV 376, P 911, LP 906									
<p>Critical cells/batteries, that means with a tendency to rapid disassembly, dangerous reaction, flame formation, dangerous heat generation, etc., may be transported in accordance with P 911 or only under conditions specified by the authorities (BAM)! (please refer XXXXXXXXXX)</p> <p>Cells/batteries can be considered non-critical (test!) if they</p> <ul style="list-style-type: none"> • have external or mechanical damage. • are considered defective for safety reasons. • have leaked or degassed. • can be shipped without diagnostics. <p>Packaging requirements:</p> <ul style="list-style-type: none"> • The cell/battery must be completely surrounded by the inner packaging. • Protection against short circuit and accidental movement within the outer packaging. • (H) at least Y-coded, composite packaging. • Use of non-combustible insulating materials and sufficient absorbent material. • Use airtight packaging with venting devices. • Net weight > 30 kg: only one cell/battery in the package. 	<p>Critical cells/batteries, which</p> <ul style="list-style-type: none"> • tend to decompose quickly. • produce a flame. • release dangerous toxic, corrosive or flammable gases. • react dangerously. • Produce a dangerous heat level. <p>Transport only according to the official specifications and with approval of BAM authority!</p> <p>Packaging requirements:</p> <ul style="list-style-type: none"> • The temperature of the outer surface of the complete package shall not exceed 100 °C. A short-term temperature peak of up to 200 °C is permitted. • No projectiles may escape from the package. • (H) at least X-coded, composite packaging. • Where appropriate, packaging must have a gas management system (e.g. filtration system, air circulation, safety container for gases, gas-tight packaging). • No flame must form outside the package. • Only certified containers with fire and drop test according to packaging group I. • The structural integrity of the package must be maintained. 									
<p>Recycling/disposal according to SV 377, P 909</p> <p>Packaging requirements:</p> <p>In all cases:</p> <ul style="list-style-type: none"> • Protection against short circuit and unintentional activation or Movement within the outer packaging (use of non-flammable or conductive cushioning materials). • No conductive material for metal packaging. • Battery ≥ 12 kg: additional resistant housing or similar 2.2.9.1.7 a) to e) ADR/RID and 2.9.4 IMDG code do not apply. <p>Cells/Batteries ≤ 1 g or 2 g / ≤ 20 Wh or 100 Wh:</p> <ul style="list-style-type: none"> • ≤ 30 kg gross weight per package. • (X) Strong outer packaging, suitable material. <p>Cells/Batteries > 1 g or 2 g / > 20 Wh or 100 Wh:</p> <ul style="list-style-type: none"> • (H) at least Y-coded, composite packaging. <p>Packed in equipment:</p> <ul style="list-style-type: none"> • (X) strong outer packaging, suitable material; Transport also unpacked/on pallets, provided that protection is equivalent. 	<p>Prototypes according to SV 310, P 910</p> <p>No test requirements according to the Manual of Tests and Criteria, Part III, Subsection 38.3</p> <ul style="list-style-type: none"> • Product series ≤ 100 cells or batteries. • Pre-production types of cells or batteries for testing. <p>Packaging requirements:</p> <p>In all cases:</p> <ul style="list-style-type: none"> • (H) at least Y-coded. • Protection against short circuit and unintentional movement (use suitable cushioning material). • Non-combustibility must be ensured. • The gross mass of the package in the outer packaging must not exceed the gross mass at the time of the type-examination. <p>Packed with or without equipment:</p> <ul style="list-style-type: none"> • Pack each cell/battery individually (e.g. plastic bag). • Completely enclose each inner package with thermal insulation material (non-combustible, non-conductive). • Net weight > 30 kg: only one cell/battery in the package. <p>Packed in equipment:</p> <ul style="list-style-type: none"> • Prevent unintentional operation during transport. 									
<p>Regular shipping according to P 903, LP 903</p> <p>Packaging requirements:</p> <p>With or without equipment:</p> <ul style="list-style-type: none"> • Inner packing must fully enclose the cell or battery. • (H) at least Y-coded, composite packaging. • Protection against short circuit and accidental movement within the outer packaging. • Battery ≥ 12 kg: additionally resistant housing or similar, protection against unintentional movement, no load on the poles. <p>Packed in equipment:</p> <ul style="list-style-type: none"> • (X) strong outer packaging, suitable material; Transport also unpacked / on pallets, provided that protection is equivalent. • Protection against short circuit and unintentional activation. 	<p>Simplified shipping according to SV 188</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;">UN 3480, 3481</td> <td style="width: 33%; text-align: center;">Li-ion-cell ≤ 20 Wh, Li-ion-batterie ≤ 100 Wh</td> <td style="width: 33%;"></td> </tr> <tr> <td style="text-align: center;">UN 3090, 3091</td> <td style="text-align: center;">Li-metal-cell ≤ 1 g, Li-metal-batterie ≤ 2 g</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Li-metal-cell ≤ 1,5 g + Li-ion-cell ≤ 10 Wh</td> <td></td> </tr> </table> <p>Packaging requirements:</p> <p>With or without equipment:</p> <ul style="list-style-type: none"> • The cell/battery must be completely surrounded by the inner packaging. • (X) strong outer packaging, suitable material. • Protection against short circuit. • Passing the drop test from a height of 1.2 m. • Gross weight of the package ≤ 30 kg. <p>Packed in equipment:</p> <ul style="list-style-type: none"> • (X) strong outer packaging, suitable material. • Protection against damage and short circuit. 	UN 3480, 3481	Li-ion-cell ≤ 20 Wh, Li-ion-batterie ≤ 100 Wh		UN 3090, 3091	Li-metal-cell ≤ 1 g, Li-metal-batterie ≤ 2 g			Li-metal-cell ≤ 1,5 g + Li-ion-cell ≤ 10 Wh	
UN 3480, 3481	Li-ion-cell ≤ 20 Wh, Li-ion-batterie ≤ 100 Wh									
UN 3090, 3091	Li-metal-cell ≤ 1 g, Li-metal-batterie ≤ 2 g									
	Li-metal-cell ≤ 1,5 g + Li-ion-cell ≤ 10 Wh									

GENIUS customers worldwide (excerpt)



GENIUS partner (excerpt)



Financing, leasing or hire-purchase

GENIUS can offer you a tailor-made financing, be it hire purchase, leasing or financing.

You decide which model is the best for you. This allows you to keep your liquidity within the company and at the same time you benefit from many tax advantages.

By the way: If you wish, we can trade in and repair your used box a repair for you.

Feel free to contact us!

GENIUS your partner for fire protection and extinguishing systems



B A M

Federal Institute for Materials Research and Testing

Certified according to QSP at BAM



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