

March 2022

# Lithium-ion battery technology, has led

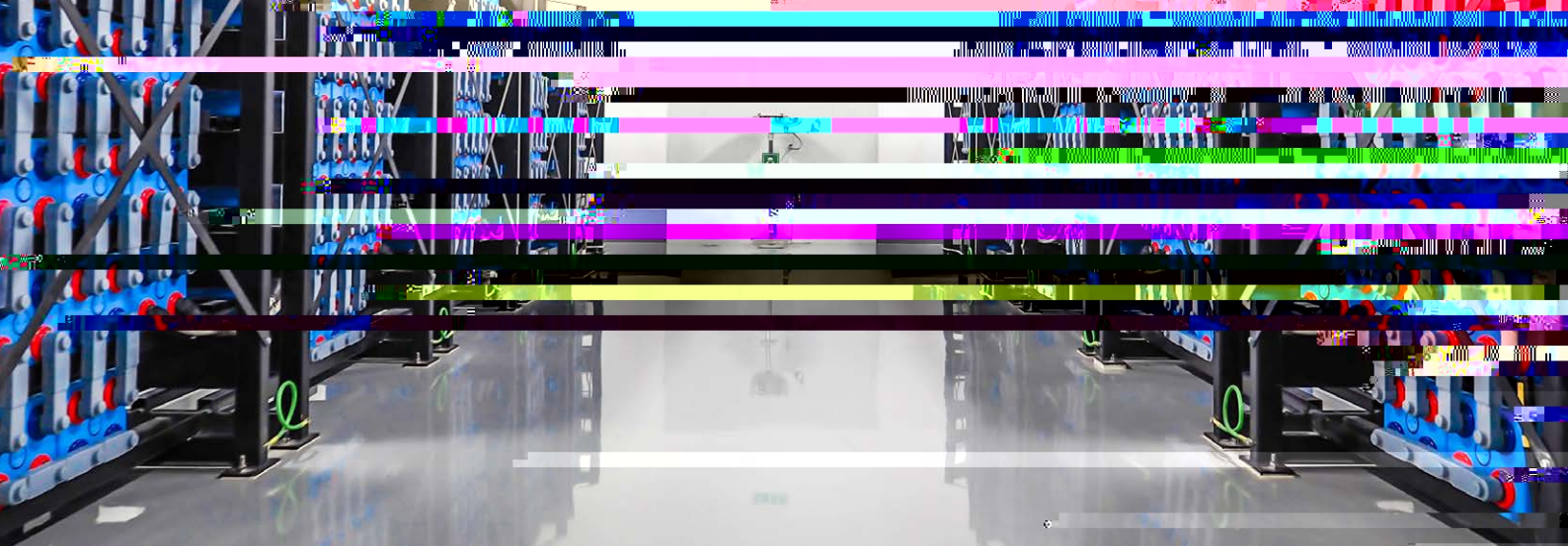
to a significant increase in the use of lithium-ion batteries in consumer electronics, automotive, and industrial applications.

As a result, the risk of fire and explosion associated with lithium-ion batteries has become a major concern for manufacturers and consumers alike.

This document provides an overview of the risks associated with lithium-ion batteries and discusses the insurance considerations for manufacturers and consumers.

## RISK AND INSURANCE CONSIDERATIONS

### Fire and explosion



7'cgY UHhYbh]cb k ]'' VY'dU]X hc' fY'gYdUfU]cb VYh YYb h'Y' dfcWggVi ]X]b[ g' ]h]gW ffYbhmVza a cb Zcf VzbYV]cbg'

-bgi fYfgk ]''Ugc VY'\_YYb hc YghUV]g\ k \ Uh h'Y dfcWXi fYg' UfY Zc''ck ]b[ 'U' fY'k ]h]b h'Y ZW]hZUbX \ck h'YgY UfY'

### Defects and machinery breakdown

: cf h'Y Vzbghfi V]cb'cZubmdfcWgg]Xf]j Yb ]bXi gh]U' dfc YVz'

Vz] Yf h'Uh h'Ymk ]''VY'k ]''b[ 'hc hU'\_Y'cb/dfYZff]b[ ' XY] Y'cdYfg'hc fY'micb h'Y [ i UfUbhYg UbX'k UffUbh]Yg]ggi YX' Vmh'Y'gi dd']Yfg UbX'a Ubi ZW] fYg'; ] Yb h'Y dchYbh]U'

cdYfU]cbgZ]h]g]a dcfUhbhc VzbgiXYf h'Y''Yj Y'cZVz] Yf' U[ U]bghgi V'k UffUbh]YgZ'h i gYbgi f]b[ 'bc'gdVYV W[ Udg]b' Vz] Yf ]b h'Y'Yj YbhczU'a U'cf''cgg''

k ]'' hU'\_Y Vza Zcfh]Z h'Y Ybh]fY ZW]c'fmd'Ubb]b[ 'UbX'XYg][ b'

Yi dYf]YbWX ]b h' ]g'gYV'cf''

### Proto-typicality

@!]cb VUHh'fmdfcXi V]cb'ci hdi h'Ug UWW'YfUHYX UhU' d\Ybca YbU'gdYXZVi h'YfY ]g'gh]''U'fUW'hc''''XYa UbX'' 5g'gi V'ZVUHh'fmiHYVbc'ic[ mUbX'h'Y'a Ubi ZW] f]b[ 'dfcWgg' UfY'UXj UbV]b[ 'UhU'fUd]X'fUH''-bgi fYfg'UfY h'YfYZcfY'dU]b[ ' WfYZ' ''UHhYbh]cb hc h'Y dfcWgg'a Yh'cXc'ic[ m]bj'c'j YX UbX' k \Yh'Yf'UbmcZ]h'Wb VY'XYa YX hc VY'dfch'hd]W] ]b'Ubm k Unt'-bgi fYfg'k ]''[ YbYfU'mbch]bgi fY'dfch'hd]W] f]g\_g'UbX' k ]''fYei ]fY' h'Uh'Ubm d'fcWgg'Ug'f'f'k ]'']b h'Y b'YUf'Z' h' fY' \Uj YZ'U'dfcj Yb'fYZ'fYbW'd'Ubh'z'cf' h'Uh'Ubm' fgh'cZU'\_]bX' d'Ubhg' UfY'g]a d'mgW'Y'i dg'cf' U'h'f'bh]j Y'UffUb[ Ya Ybhcz

]bgi fUbW' d'fc[ fUa a Y'Uh h'Y''ck YghVz'gh''

### Delay risk

-bgi fYfgk ]''U'k Umg'Wz'gY'mYi Ua ]bY h'Y dchYbh]U' f]g'\_UbX' VzbgiYei YbW'g'cZY'Unz'g'ci 'X'8Y'Um]b'GHUfHl d'fBGl' E' ]bgi fUbW' VY'fYei YghYX' Vmh'Y ]bgi fYX' ''cf'a cfY Vza a cb'nz' fYei ]fYX'Vmdfc'V'V'h'YbXYfg''

A Ubm]f]g\_g' \Uj Y' h'Y dchYbh]U' hc VzbgiXYfU' m]a dUW'h'Y' d'fc'V'V'g'V'YXi 'Y''7cbW'f'bg'UfY'Yi UW'f'VUH'X' U'g'VUHh'f'm a Ubi ZW] f]b[ 'cdYfU]cbg'a' c'j Y'hc' \][ \!h'fci [ \di h' Vzb]bi ci g'dfcWgg'k ]h' \Uf[ Y'g]b[ 'Y'a UW ]bYg''

'cggYg'Xi Y'hc h'Y'g'W'Y'UbX'i b]ei Y''cb[ !'YUX'fYd'UW'a Ybh h]a Yg'Zcf'\_Ym'Yei ]da Ybh''

-bgi fYfgk ]''gY'\_hc i bXYfghUbX'h'Y'VUg]g'cZ'h'Y'fYj Ybi Y'

]bZ'fa Uh]cb'k ]''Ugg]gh'h'Ya ]b h'Uh' d'fcWgg.

- : i ''VfYU\_Xck b'cZ'h'Y'd'fc'Y'V'V'X'fYj Ybi Y''
- 5ggi a dh]cbg'gh'fU]h' ]Yg'hU'\_Yb ]bhc'UW'z'ci bh]b'h'Y' cdYfU]cb'cZ'h'Y'Z'W]c'f'm'
- 

- @UX h]a Yg'Zcf' h'Y'fYd'UW'a Ybh'cZ'W]h]W' 'Yei ]da Ybh'' -b' h'Y'W'ffYbhVzbghfi V]cb' ]bgi fUbW'a Uf'\_Y'hd'UW' h'Y'fY' ]g'\_]\_Y'm'hc' VY' ]h'Y'Udd'Y'h]h'Y'hc' ]bgi fY' h'Y'Z' ''fYj Ybi Y' VzbgiYei YbW'g'cZU'XY'Unz'UbX'XYj Y'cdYfg'g'ci 'X'VzbgiXYf' h' ]g'dchYbh]U' ]b h'Y]f' d'fc'V'V'h' b'UbV]U'a cXY''

### Third party and environmental liability

5W]XYbh]g'U' V]V]b[ '@!]cb VUHh'f'mZ'W]c'f]Yg'W]b'U'gc' \Uj'Y'U' a U'cf' ]a d'UW]cb h'Y' d'fcd'Yfh]Yg'cf' \U'U'h' cZ'h' ]fX'd'Ufh]Yg''B'ch' cb'm'W]b h'Y'X' ]fYV'h'fYgi 'hg'cZ' fY'W]i' gY'U'g][ b] W]bh' \Un'UfXZ'

Vmh'Y'BU]h]cbU' : ]fY'Dfch'V]cb'5ggc'V]U]cb'fB : D5'z'cb '@!]cb' VUHh'f]YgZ' \Uj'Y'g'ck b'h'Uh]g][ b] W]bh'Ua'ci bh'g'cZ' \n'X'fc[ Yb' i'cf]XY'W]b VY'fY'U'gYX''K' \Yb ]b Vzb'bh'U'h'k ]h'k'Uh'f'Z'h' ]g' VYVza Yg' \n'X'fc i'cf]W]V]X' ''cbY'cZ'h'Y'a cgh'Vz'ffcg] ] Y' h'hd]Yg'cZU'V]X'z'k \ ]W' W]b'U' VV'h'fYg]f]U'f'c'm'g'n]h'Y'a g'UbX'Yj Yb' X]gg'c'j Y' [ 'Ugg''-bgi fYfg'bYX'hc'Z' ''mi bXYfghUbX'Ya Yf[ YbV'h' d'fcWXi fYg'hc'Ug'W'f]U]b' \ck'Z'Uf' h'Y'Y' VV'h'cb' h'Y'gi' f'fci bX]b[ ']

### The impact of lenders, and operational insurance considerations

K \ ]Y'Yg'U]V]g'YX' [ 'cVU' VUHh'f'mia Ubi ZW] f]b[ 'Vza d'Ub]Yg' Xc' bchVza a cb'm'g'Y'\_hc' f]U]g'Y'XYV'hU[ U]bgh'h'Y]f' d'fc'Y'V'V'g'z' h'Y'fY'UfY'a Ubm'Vza d'Ub]Yg'h'Uh'Xc' i' h] ]g'Y' d'fc'V'V'h' b'UbW'UbX' U'g'gi W' b'YX'hc' Vza d'mk ]h' h'Y'fYei ]fYa Ybhg' b'U' mU[ fYX' k ]h' \YbXYfg''5g]XY'Z'ca h'Y'i'gi U''YbXYf'fYei ]fYa YbhgZ'h'Y'

cZcdYfU]cbU' ]bgi fUbW'g'z'k \ ]W' 'a i' gh'VY'a U]b]U]bYX' h'fci [ \ci h'Y'dYf]cX'cZ'h'Y]f'c'Ub'U[ fY'Ya Ybh''

d'fcW'fYa Ybhcz'd'fcXi V'h'fYW''UbX'' ]U]V] ]m]bgi fUbW' ''U' \ ]gh'c]f]W''mX' W'ha Uf'\_Y'h'Zcf'@!]cb' d'fcXi W'fg' 'h'Y'

cZ'h'Y'YbXYfg'fYgi 'h'U'bh'd'Y'f'W'dh]cb'cZ'h'Y'cdYfU]cbU' a Ubi ZW] f]b[ 'Z'W] ]m]f]g'\_d'fc' 'Y''

Joao Buzio

@5H5A FY[ ]cbU`7cbgfi Vm]cb`

-bZfUghfi Vm FY / `Gi fYmžl ?ž

A Ufg\ `GdYVU`hm

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## About Marsh

( ) žš\$ \$ Vč`YU[ i Yg`cdYfUH]b[ ]b`% \$`

A VčYbbUb`fB MG9. `A A 7ž`h`Y`k`c`f`X`g`  
`YUX]b[ `d`f`c`Z`Y`g`g`c`b`U``g`Y`f` ]W`g` fa `]b`  
h`Y`U`f`Y`U`g`c`Z`f`]g`\_`ž`g`h`f`U`h`[ m]UbX`d`Y`c`d`Y`"

V]`]cbžA Ufg\ `A VčYbbUb`\`Y`d`g`W]Yb]hg`

Vč`a`d`Yl` `Ybj`]f`c`b`a`Y`b`h`h`f`c`i`[ \ `Z`c`i`f`  
a`U`f`\_`Y`H`Y`U`X]b[ `Vi`g]b`Y`g`g`Y`g` `A`U`f`g`\`ž` ; i`m`  
7`U`f`d`Y`b`h`Y`f`ž`A`Y`f`W`f`U`b`X`C``]j`Y`f`K`na`Ub`"

Zc`ck`i`g`c`b`@]b`\_`Y`X`-`b`Ub`X`H`k`]h`Y`f`c`f`  
g]`V`g`W]VY`h`c`6`F`-`B`?"

]bZcfa Uh]cb`cb`m`h`Y` ]bZcfa Uh]cb`g`b`ch]b`h`b`X`Y`X`h`c`V`Y`H`\_`Y`b`U`g`U`X`j`]W`k`]h`f`Y`g`d`Y`W`h`c`Ub`m`  
]b`X`j`]X`i`U``g]h`Uh]cb`Ub`X`V`b`b`c`h`V`Y`f`Y`]Y`X`i`d`c`b`U`g`g`i`V`W`"A`U`f`g`\`@`X`]g`U`i`h`c`f`]g`Y`X`Ub`X`f`Y`[`i`U`h`Y`X`  
V`m`h`Y`:`]b`Ub`V`U`7`c`b`X`i`V`h`5`i`h`c`f`]m`Z`c`f`:`Y`b`Y`f`U`-`b`g`i`f`U`b`W`8`]g`f`f`]V`i`h]cb`Ub`X`7`f`Y`X`]h`6`f`c`\_`]b`[`  
f`i`]f`a`f`Y`Z`f`f`b`W`B`c`" "\$+) %&`7`c`d`n`f`[ \`h` `&\$&&A`U`f`g`\`@`X`"F`Y`[ ]g`h`f`Y`X`]b`9`b`[ `Ub`X`Ub`X`K`U`Y`g`  
B`i`a`V`Y`f`.%`\$`+`&`+(ž`F`Y`[ ]g`h`f`Y`X`c`W`.%`h`c`k`Y`f`D`U`W`K`Y`g`ž`h`c`k`Y`f`D`U`W`ž`c`b`X`c`b`97`F`)`6`l`" "  
5`" `f`[ \`h`g`f`Y`g`f`j`Y`X`"7`c`d`n`f`[ \`h` `&\$&&"&& ,`-`(`&`\*`+`%`-`"