

## Explanatory sheet about safety of product for transportation (Safety Data Sheet for transportation)

### 1. Basic item

Product name	Lithium ion battery (“Lithium ion battery” includes lithium polymer battery in this document)
UN number	3480
Product code	Refer to Table 1.
Product model name	Refer to Table 1.
Manufacturer	SANYO Electric Co., Ltd., Panasonic group
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### 2. Product information

#### Basic composition of the product

This product is a battery which consists of such main component as core battery pack assembled with some Lithium ion cells. And it consists of any combination of plastic casing, tube casing, protection circuit boards, safety devices and interface terminals.

### 3. Safety Information

- SANYO certifies the battery has passed and satisfied the UN Manual of Tests and Criteria Part III, sub-section 38.3 testing in SANYO shipping.
- SANYO manufactured the battery under the quality management program required in UN Model regulations 2.9.4(e).

#### 3-1) Component cell

The Watt-hour rating of the component Lithium ion cells is not more than 20Wh.  
Refer to Appendix “SDS (SDS-IAT-00005)”.

#### 3-2) Battery pack

1. The Watt-hour rating of the battery is not more than 100Wh.
2. Packages of the battery satisfy the following conditions when SANYO ships.
  - (1) The package has passed the drop test from the height of 1.2m.
  - (2) The package net weight is not more than 10kg.
  - (3) The package is marked and labeled according to requirement of the Packing Instruction 965 Section IB stated in ICAO's and IATA's dangerous goods regulations.
3. The battery is not defective for safety reasons, not damaged. It is not collected battery for recycling or disposal.
4. The battery is not subject to the fully regulated requirements for Dangerous Goods in ocean and ground transportation.
5. The battery should be transported by Cargo aircraft as UN3480, Class 9 Dangerous Goods, and state of charge not exceeding 30%, according to requirement of the Packing Instruction 965 Section IB stated in ICAO's and IATA's dangerous goods regulations.



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Table 1. Applied Model Name

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
AL-N2	AL-NFBL020J	CGR-B/303B	CGR18650	3.6	10.8	1.2	1.2	13	3	1.08	CGR-B/303B
CF-07	CF-VZSU21 CF-VZSU21JS CF-VZSU21W	2UF103450P-MDS-07 2UF103450P-B002A	UF103450P	3.7	7.4	1.7	1.7	13	2	1.02	N4HULPA00009 N4HULPA00013
CF-08	CF-VZSU44 CF-VZSU44U	2UR18650F-2-MDS-08 2UR18650F-2-MDS-13	UR18650F	3.7	7.4	5.2	5	37	4	3.00	N4HULSA00007 N4HULSA00012
CF-08	CF-VZSU44CJS	2UR18650F-2-MDS-14	UR18650F	3.7	7.4	5.2	5	37	4	3.00	N4HULSA00010
CF-18	CF-VZSU36	CGR-B/6B4B	CGR18650CA	3.7	7.4	6.6	6.12	46	6	3.67	CGR-B/6B4B
CF-18	CF-VZSU30 CF-VZSU30U	CGR-B/682A	CGR18650CA	3.7	7.4	6.6	6.12	46	6	3.67	CGR-B/682A
CF-18	CF-VZSU30A CF-VZSU30AU	CGR-B/6C2A	CGR18650D	3.7	7.4	7.05	6.66	50	6	4.00	CGR-B/6C2A
CF-18	CF-VZSU30B CF-VZSU30BU	CGR-B/6D8H CGR-B/6D8M CGR-B/6D8T 2CGR18650E3-B005A	CGR18650E	3.7	7.4	7.65	7.26	54	6	4.36	CGR-B/6D8H CGR-B/6D8M CGR-B/6D8T N4HULTA00025
CF-18	CF-VZSU30BR	CGR-B/6D8J CGR-B/6D8L CGR-B/6D8N CGR-B/6D8R	CGR18650E	3.7	7.4	7.65	7.26	54	6	4.36	CGR-B/6D8J CGR-B/6D8L CGR-B/6D8N CGR-B/6D8R
CF-18	CF-VZSU30BR2	CGR-B/6D8K CGR-B/6D8P	CGR18650E	3.7	7.4	7.65	7.26	54	6	4.36	CGR-B/6D8K CGR-B/6D8P
CF-19	CF-VZSU48 CF-VZSU48U	NCR-B/603E NCR-B/603K 3NCR18650T2-B00MA BJ-A330074CA	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/603E NCR-B/603K N4HUNSA00030 N4HUNSA00061
CF-19	CF-VZSU48R	NCR-B/603F 3NCR18650T2-B007A 3NCR18650T2-B00ME BJ-A330078AB BJ-A330078BB	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/603F N4HUNSA00021 N4HUNSA00034 N4HUNSA00042 N4HUNSA00053
CF-19	CF-VZSU48R2	NCR-B/603G 3NCR18650T2-B00MB	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/603G N4HUNSA00031
CF-19	CF-VZSU48K	NCR-B/603H 3NCR18650T2-B00MC	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/603H N4HUNSA00032
CF-19	CF-VZSU50 CF-VZSU50W	NCR-B/607C NCR-B/607D 3NCR18650T2-B00MF BJ-A330080BA	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/607C NCR-B/607D N4HUNSA00035 N4HUNSA00062
CF-19	CF-VZSU58U	3UR18650ZT-2-MDS19 3UR18650ZT-2-MDS-4	UR18650ZT	3.7	11.1	5.6	5.3	59	6	4.77	N4HUNSA00012 N4HUNSA00018
CF-19A/B/X/1/2/3 (JP)	CF-VZSU48CJS	NCR-B/699A 3NCR18650T2-B00MD	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/699A N4HUNSA00033
CF-19	CF-VZSU87E	3NCR18650F2-B00EA 3NCR18650F2-B00NA BJ-A330079BA	NCR18650F	3.55	10.65	5.7	5.4	58	6	4.86	N4HUNSA00025 N4HUNSA00036 N4HUNSA00063
CF-19	CF-VZSU87R	3NCR18650F2-B00NB BJ-A330148BA	NCR18650F	3.55	10.65	5.7	5.4	58	6	4.86	N4HUNSA00041 N4HUNSA00056
CF-20 FZ-A2	CF-VZSU0QW	BJ-HM30001AA BJ-HM30001GA	UF515761ST	3.8	11.4	2.72	2.6	30	3	2.34	N4HUNQA00010 N4HUNQA00026
CF-20 FZ-A2	CF-VZSU0QJS	BJ-HM30001BA BJ-HM30001HA	UF515761ST	3.8	11.4	2.72	2.6	30	3	2.34	N4HUNQA00012 N4HUNQA00025
CF-20 FZ-A2	CF-VZSU0QR	BJ-HM30001DA BJ-HM30001JA	UF515761ST	3.8	11.4	2.72	2.6	30	3	2.34	N4HUNQA00018 N4HUNQA00027
CF-20 FZ-A2	CF-VZSU0QQ	BJ-HM30001EA BJ-HM30001KA	UF515761ST	3.8	11.4	2.72	2.6	30	3	2.34	N4HUNQA00023 N4HUNQA00028
CF-20 FZ-A2	CF-VZSU0QK	BJ-HM30001FA BJ-HM30001LA	UF515761ST	3.8	11.4	2.72	2.6	30	3	2.34	N4HUNQA00024 N4HUNQA00029
CF-28/48/50	CF-VZSU18B CF-VZSU18BU	3UR18650F-3-MDS-50 3UR18650F-3-MDS-12	UR18650F	3.7	11.1	6.6	6.3	70	9	5.67	N4HUNSA00009 N4HUNSA00019
CF-28/48/50	CF-VZSU18 CF-VZSU18U	3UR18650P-3-MDS-48	UR18650P	3.7	11.1	5.4	5.1	57	9	4.59	N4HUNSA00010
CF-25	CF-VZS251 CF-VZS251AJ CF-VZS251AW	CGR-B/607C	CGR18650	3.6	10.8	2.45	2.45	27	6	2.21	CGR-B/607C
CF-29	CF-VZSU29 CF-VZSU29U	CGR-B/957A	CGR18650CA	3.7	11.1	6.6	6.12	68	9	5.51	CGR-B/957A
CF-29	CF-VZS29R	CGR-B/957B	CGR18650CA	3.7	11.1	6.6	6.12	68	9	5.51	CGR-B/957B
CF-29	CF-VZSU29A CF-VZSU29AU	CGR-B/982D	CGR18650E	3.7	11.1	7.65	7.26	81	9	6.53	CGR-B/982D
CF-29	CF-VZSU29AR	CGR-B/982E	CGR18650E	3.7	11.1	7.65	7.26	81	9	6.53	CGR-B/982E
CF-29/51/52	CF-VZSU29AS CF-VZSU29ASU	3UR18650F-3-MDS-52 3UR18650F-3-MDS52F 3UR18650F3-B006A BJ-A130301BA	UR18650F	3.7	11.1	7.8	7.5	84	9	6.75	N4HUNTA00006 N4HUNTA00010 N4HUNTA00011 N4HUNTA00025 N4HUNTA00052
CF-29/51/52	CF-VZSU29ASR	3UR18650F-3-MDS52C	UR18650F	3.7	11.1	7.8	7.5	84	9	6.75	N4HUNTA00008
CF-29/51/52	CF-VZSU29ASK	3UR18650F-3-MDS52K 3UR18650F3-B003A	UR18650F	3.7	11.1	7.8	7.5	84	9	6.75	N4HUNTA00009 N4HUNTA00015
CF-30	CF-VZSU46 CF-VZSU46U	NCR-B/901D NCR-B/901K 3NCR18650T3-B009B BJ-A330121BA	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/901D NCR-B/901K N4HUNTA00022 N4HUNTA00032

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
CF-30	CF-VZSU46R	NCR-B/901E NCR-B/922RE NCR-B/922SE NCR-B/922VE NCR-B/922YE	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/901E NCR-B/922RE NCR-B/922SE N4HUNTA00034 N4HUNTA00040
CF-30	CF-VZSU46T	NCR-B/901F NCR-B/901H NCR-B/901JE NCR-B/901L NCR-B/901ME 3NCR18650T3-B009C	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/901F NCR-B/901H NCR-B/901JE NCR-B/901L NCR-B/901ME N4HUNTA00023
CF-31	CF-VZSU46AU	NCR-B/916A NCR-B/916BE 3NCR18650T3-B002A 3NCR18650T3-B002B NCR-B/922AE NCR-B/922BE 3NCR18650T3-B009A NCR-B/922UE BJ-A330120BA BJ-A330120EA BJ-A330120KA	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/916A NCR-B/916BE N4HUNTA00013 N4HUNTA00017 NCR-B/922AE NCR-B/922BE N4HUNTA00021 N4HUNTA00035 N4HUNTA00036 N4HUNTA00045 N4HUNTA00060
CF-31	CF-VZSU46AT	NCR-B/922HE NCR-B/922JE NCR-B/922TE NCR-B/922WE NCR-B/922ZE BJ-A330120DA BJ-A330120FA BJ-A330120GA	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/922HE NCR-B/922JE N4HUNTA00030 N4HUNTA00038 N4HUNTA00043 N4HUNTA00044 N4HUNTA00046 N4HUNTA00047
CF-31	CF-VZSU86E	3NCR18650F3-B003A BJ-A390004BA BJ-A390004CA	NCR18650F	3.55	10.65	8.55	8.1	87	9	7.29	N4HUNTA00016 N4HUNTA00037 N4HUNTA00048
CF-33	CF-VZSU1AW	BJ-F630041AA BJ-F630041DA	UF653864S	3.7	11.1	2.05	1.99	22	3	1.79	N4HUNPA00001 N4HUNPA00004
CF-33	CF-VZSU1AJS	BJ-F630041BA	UF653864S	3.7	11.1	2.05	1.99	22	3	1.79	N4HUNPA00002
CF-33	CF-VZSU1BW	BJ-A130423AA BJ-A130423DA	UR18650A	3.6	10.8	4.42	4.12	45	6	3.71	N4HUNRA00063 N4HUNRA00080
CF-33	CF-VZSU1BJS	BJ-A130423BA	UR18650A	3.6	10.8	4.42	4.12	45	6	3.71	N4HUNRA00065
CF-52/31	CF-VZSU65AU	3UR18650F-2-MDS31V 3UR18650F-2-MDS-5 BJ-A130015BA BJ-A130407CA	UR18650F	3.7	11.1	5.2	5	56	6	4.50	N4HUNSA00014 N4HUNSA00017 N4HUNSA00048 N4HUNSA00070
CF-52	CF-VZSU65U	3UR18650F-2-MDS52V 3UR18650F-2-MDS-3	UR18650F	3.7	11.1	5.2	5	56	6	4.50	N4HUNSA00013 N4HUNSA00016
CF-52/53	CF-VZSU71U	CGR-B/9A7AE CGR-B/9A7CE	CGR18650CG	3.6	10.8	6.75	6.3	69	9	5.67	CGR-B/9A7AE CGR-B/9A7CE
		3UR18650A3-B004A 3UR18650A3-B005A BJ-A130227AB BJ-A130227BA BJ-A130227DA BJ-A130228BA	UR18650A	3.6	10.8	6.75	6.3	69	9	5.67	N4HUNSA00026 N4HUNSA00027 N4HUNSA00043 N4HUNSA00049 N4HUNSA00066 N4HUNSA00072
CF-53	CF-VZSU71R	CGR-B/9A7BE CGR-B/9A7DE	CGR18650CG	3.6	10.8	6.75	6.3	69	9	5.67	CGR-B/9A7BE CGR-B/9A7DE
		3UR18650A3-B004B BJ-A130229BA BJ-A130229CA	UR18650A	3.6	10.8	6.75	6.3	69	9	5.67	N4HUNSA00028 N4HUNSA00050 N4HUNSA00054
CF-53	CF-VZSU72U	CGR-B/6T5AE CGR-B/6T5CE	CGR18650CG	3.6	10.8	4.5	4.2	46	6	3.78	CGR-B/6T5AE CGR-B/6T5CE
		3UR18650A2-B00JA BJ-A130225CA BJ-A130224EA 3UR18650A2-B00KA BJ-A130224CA BJ-A130224BA BJ-A130225BA BJ-A130224DA	UR18650A	3.6	10.8	4.5	4.2	46	6	3.78	N4HUNRA00012 N4HUNRA00013 N4HUNRA00033 N4HUNRA00030 N4HUNRA00031 N4HUNRA00047 N4HUNRA00054 N4HUNRA00055
CF-53	CF-VZSU72R	CGR-B/6T5BE CGR-B/6T5DE	CGR18650CG	3.6	10.8	4.5	4.2	46	6	3.78	CGR-B/6T5BE CGR-B/6T5DE
		3UR18650A2-B00JB	UR18650A	3.6	10.8	4.5	4.2	46	6	3.78	N4HUNRA00014
CF-54	CF-VZSU0GW	BJ-F930011AA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00028
CF-54	CF-VZSU0GJS	BJ-F930011BA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00032
CF-54	CF-VZSU0KW	BJ-CA30001AA BJ-CA30001CA BJ-CA30001EA	UF703450F	3.7	11.1	2.96	2.86	32	6	2.57	N4HUNQA00006 N4HUNQA00015 N4HUNQA00019
CF-54	CF-VZSU0KJS	BJ-CA30001BA BJ-CA30001FA	UF703450F	3.7	11.1	2.96	2.86	32	6	2.57	N4HUNQA00008 N4HUNQA00020
CF-54	CF-VZSU0KR	BJ-CA30001DA BJ-CA30001GA	UF703450F	3.7	11.1	2.96	2.86	32	6	2.57	N4HUNQA00013 N4HUNQA00021
CF-54	CF-VZSU0LW	BJ-CG30001AA BJ-CG30001CA BJ-CG30001EA	NCA903864A	3.6	10.8	3.22	3.05	33	3	2.75	N4HUNQA00009 N4HUNQA00016 N4HUNQA00022
CF-54	CF-VZSU0PW	BJ-F630010AA BJ-F630010FA BJ-F630010GA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00034 N4HUNRA00049 N4HUNRA00058

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CF-54	CF-VZSU0PJS	BJ-F630010AB BJ-F630010HA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00035 N4HUNRA00059
CF-54	CF-VZSU0PR	BJ-F630010CA BJ-F630010JA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00037 N4HUNRA00060
CF-54	CF-VZSU0PK	BJ-F630010DA BJ-F630010KA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00038 N4HUNRA00061
CF-71	CF-VZSU09	CGR-B/935B	CGR18650HC	3.6	10.8	4.5	4.5	49	9	4.05	CGR-B/935B
CF-73	CF-VZSU26 CF-VZSU26U	3UF103450P-2-MDS73 3UF103450P2-B002A	UF103450P	3.7	11.1	3.8	3.6	40	6	3.24	N4HUNRA00007 N4HUNRA00010
CF-74	CF-VZSU43A CF-VZSU43AU	3UR18650F-3-MDS74A 3UR18650F-3-MDS-13	UR18650F	3.7	11.1	7.8	7.5	84	9	6.75	N4HUNTA00007 N4HUNTA00012
CF-A1	CF-VZSU12 CF-VZSU12J	CGR-B/315B	CGR18650HG	3.6	10.8	1.7	1.7	19	3	1.53	CGR-B/315B
CF-A1	CF-VZSU13 CF-VZSU13J	CGR-B/943A	CGR18650HG	3.6	10.8	5.1	5.1	55	9	4.59	CGR-B/943A
CF-A2/A3	CF-VZSU20 CF-VZSU20J CF-VZSU20JS	CGR-B/653C	CGR18650A	3.7	11.1	4	3.8	43	6	3.42	CGR-B/653C
CF-AX2/AX3	CF-VZSU81JS	2NCA653864-2-B001A	NCA653864	3.6	7.2	4.4	4.1	30	4	2.46	N4HULRA00012
CF-AX2/AX3	CF-VZSU81EA	2NCA653864-2-B001B 2NCA653864-2-B001C BJ-F920004CA BJ-F920004DA	NCA653864	3.6	7.2	4.4	4.1	30	4	2.46	N4HULRA00014 N4HULRA00015 N4HULRA00019 N4HULRA00023
CF-AX2/AX3	CF-VZSU81R	2NCA653864-2-B001D BJ-F920005BA	NCA653864	3.6	7.2	4.4	4.1	30	4	2.46	N4HULRA00016 N4HULRA00021
CF-AX2/AX3	CF-VZSU85JS	2NCA653864-2-B002A	NCA653864	3.6	7.2	4.4	4.1	30	4	2.46	N4HULRA00013
CF-AX2/AX3	2-653864-B001	2NCA653864-B001A	NCA653864	3.6	7.2	2.2	2.05	15	2	1.23	N4HULPA00015
CF-AX2/AX3	2-653864-B01B	2NCA653864-B001B BJ-F620001BA BJ-F620001CA	NCA653864	3.6	7.2	2.2	2.05	15	2	1.23	N4HULPA00016 N4HULPA00019 N4HULPA00024
CF-AX2/AX3	2-653864-B01C	2NCA653864-B001C BJ-F920006BA	NCA653864	3.6	7.2	2.2	2.05	15	2	1.23	N4HULPA00017 N4HULPA00021
CF-AX2/AX3	2-622944-B001	2NCA622944-B001A	NCA622944	3.6	7.2	1.09	1.03	7.5	2	0.62	N4HULNA00001
CF-AX2/AX3	2-622944-B01B	2NCA622944-B001B BJ-F920001BA	NCA622944	3.6	7.2	1.09	1.03	7.5	2	0.62	N4HULNA00002 N4HULNA00004
CF-B10/B11	CF-VZSU69JS	3UR18650A-2-MDS BJ-A130346AA	UR18650A	3.6	10.8	4.5	4.2	46	6	3.78	N4HUNRA00008 N4HUNRA00029
CF-B10/B11	CF-VZSU70JS	3UR18650A-MDS-2 BJ-A130345AA	UR18650A	3.6	10.8	2.25	2.1	23	3	1.89	N4HUNQA00001 N4HUNQA00007
CF-B10/B11	CF-VZSU77JS	3UR18650ZTA-2-MDS2	UR18650ZTA	3.7	11.1	7	5.7	64	6	5.13	N4HUNSA00015 N4HUNSA00052
CF-C1	CF-VZSU66U	2UR18650ZT-2-MDSC1 2UR18650Z2-B002A	UR18650ZTA	3.7	7.4	6	5.7	43	4	3.42	N4HULSA00008 N4HULSA00014 N4HULSA00029
CF-C2	CF-VZSU80U	3NCR18650B2-B006A 3NCR18650B2-B006B BJ-A330082CA	NCR18650B	3.6	10.8	6.8	6.4	70	6	5.76	N4HUNSA00024 N4HUNSA00029 N4HUNSA00069
CF-C2	CF-VZSU82U	3NCR18650B-B001A 3NCR18650B-B001B BJ-A330083BA	NCR18650B	3.6	10.8	3.4	3.2	35	3	2.88	N4HUNQA00002 N4HUNQA00003 N4HUNQA00014
CF-C2	CF-VZSU83U	3NCR18650A3-B001A 3NCR18650A3-B001B BJ-A330081BA	NCR18650A	3.6	10.8	9.3	8.7	94	9	7.83	N4HUNTA00014 N4HUNTA00018 N4HUNTA00049
CF-D1	CF-VZSU73U	NCR-B/693AE NCR-B/693CE NCR-B/693EE NCR-B/693JE	NCR18650A	3.6	10.8	6.2	5.8	63	6	5.22	NCR-B/693AE NCR-B/693CE N4HUNSA00044 N4HUNSA00058
CF-D1	CF-VZSU73R	NCR-B/693BE NCR-B/693DE NCR-B/693FE NCR-B/693GE NCR-B/693KE	NCR18650A	3.6	10.8	6.2	5.8	63	6	5.22	NCR-B/693BE NCR-B/693DE N4HUNSA00051 N4HUNSA00055 N4HUNSA00059
CF-D1	CF-VZSU73SP	3NCR18650A2-B001A BJ-A330022AB BJ-A330022BB NCR-B/693LE	NCR18650A	3.6	10.8	6.2	5.8	63	6	5.22	N4HUNSA00020 N4HUNSA00045 N4HUNSA00057 N4HUNSA00060
CF-F8 CF-F9 (US/EU)	CF-VZSU56U	NCR-B/617A 3NCR18650T2-B009A 3NCR18650T2-B009B NCR-B/617D NCR-B/617E	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/617A N4HUNSA00023 N4HUNSA00038 N4HUNSA00047 N4HUNSA00064
CF-F9/F10 (JP)	CF-VZSU56AJ	NCR-B/666A	NCR18650A	3.6	10.8	6.2	5.8	63	6	5.22	NCR-B/666A
CF-F9/F10 (CN)	CF-VZSU56AR	NCR-B/666B	NCR18650A	3.6	10.8	6.2	5.8	63	6	5.22	N4HUNSA00071
CF-J9/J10	CF-VZSU67JS	NCR-B/429A	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	NCR-B/429A
CF-J9/J10	CF-VZSU67R	NCR-B/429B	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	N4HULSA00056
CF-J9/J10	CF-VZSU68JS	NCR-B/673A	NCR18650A	3.6	7.2	9.3	8.7	63	6	5.22	NCR-B/673A
CF-J9/J10	CF-VZSU68R	NCR-B/673B	NCR18650A	3.6	7.2	9.3	8.7	63	6	5.22	N4HULTA00045
CF-L2	CF-VZSU19 CF-VZSU19JS	3UF103450P-2-MDSL2	UF103450P	3.7	11.1	3.6	3.4	38	6	3.06	N4HUNRA00006
CF-LX3/LX4/LX5/LX6	CF-VZSU90JS	3NCR18650G2-B00UA BJ-A330131CA	NCR18650G	3.6	10.8	7.1	6.8	74	6	6.12	N4HUNTA00020 N4HUNTA00053
CF-LX3/LX4/LX5/LX6	CF-VZSU90Y	BJ-A330131BA BJ-A330131BB BJ-A330131FB	NCR18650G	3.6	10.8	7.1	6.8	74	6	6.12	N4HUNTA00027 N4HUNTA00031 N4HUNTA00054

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
CF-LX3/LX4/LX5/LX6	CF-VZSU90R	BJ-A330131CB BJ-A330131EB BJ-A330131GB	NCR18650G	3.6	10.8	7.1	6.8	74	6	6.12	N4HUNTA00029 N4HUNTA00041 N4HUNTA00055
CF-LX3/LX4/LX5/LX6	CF-VZSU90E	BJ-A330131DB BJ-A330131HB	NCR18650G	3.6	10.8	7.1	6.8	74	6	6.12	N4HUNTA00033 N4HUNTA00056
CF-LX3/LX4/LX5/LX6	CF-VZSU91JS	3NCR18650G-B003A BJ-A330095DA	NCR18650G	3.6	10.8	3.55	3.4	37	3	3.06	N4HUNRA00015 N4HUNRA00050
CF-LX3/LX4/LX5/LX6	CF-VZSU91Y	BJ-A330095BA BJ-A330095BB BJ-A330095DB	NCR18650G	3.6	10.8	3.55	3.4	37	3	3.06	N4HUNRA00021 N4HUNRA00026 N4HUNRA00051
CF-LX3/LX4/LX5/LX6	CF-VZSU91R	BJ-A330095CB BJ-A330095EB	NCR18650G	3.6	10.8	3.55	3.4	37	3	3.06	N4HUNRA00024 N4HUNRA00052
CF-LX3/LX4/LX5/LX6	CF-VZSU0CJS	BJ-A330158AA BJ-A330158BA	NCR18650G	3.6	10.8	7.1	6.8	74	6	6.12	N4HUNTA00028 N4HUNTA00057
CF-LX3/LX4/LX5/LX6	CF-VZSU0DJS	BJ-A330159AA BJ-A330159BA	NCR18650G	3.6	10.8	3.55	3.4	37	3	3.06	N4HUNRA00023 N4HUNRA00053
CF-M34	CF-VZSU15A CF-VZSU15AJS	CGR-B/664F	CGR18650A	3.7	11.1	4	3.8	43	6	3.42	CGR-B/664F
CF-M34	CF-VZSU15A CF-VZSU15AW	CGR-B/664G	CGR18650A	3.7	11.1	4	3.8	43	6	3.42	CGR-B/664G
CF-MX3/MX4/MX5	CF-VZSU92JS	2NCA653864A2-B004A BJ-F920007BA	NCA653864A	3.6	7.2	4.8	4.56	33	4	2.74	N4HULRA00017 N4HULRA00025
CF-MX3/MX4/MX5	CF-VZSU92E	BJ-F920011AA BJ-F920011CA	NCA653864A	3.6	7.2	4.8	4.56	33	4	2.74	N4HULRA00020 N4HULRA00026
CF-MX3/MX4/MX5	CF-VZSU92R	BJ-F920013AA BJ-F920013BA	NCA653864A	3.6	7.2	4.8	4.56	33	4	2.74	N4HULRA00022 N4HULRA00027
CF-MX3/MX4/MX5	CF-VZSU93JS	2NCA653864A2-B005A BJ-F920008BA	NCA653864A	3.6	7.2	4.8	4.56	33	4	2.74	N4HULRA00018 N4HULRA00028
CF-MX3/MX4/MX5	2-644553-B001	2UF644553F-B001A BJ-F220001BA	UF644553FT	3.8	7.6	2.06	2	16	2	1.20	N4HULPA00018 N4HULPA00023
CF-MX3/MX4/MX5	2-644553-B002	BJ-F220002AA BJ-F220002CA	UF644553FT	3.8	7.6	2.06	2	16	2	1.20	N4HULPA00020 N4HULPA00026
CF-MX3/MX4/MX5	2-644553-B003	BJ-F220003AA BJ-F220003BA	UF644553FT	3.8	7.6	2.06	2	16	2	1.20	N4HULPA00022 N4HULPA00027
CF-P1	CF-VZSU22 CF-VZSU22JS CF-VZSU22W	2UR18650-MDS-6	UR18650P	3.7	7.4	1.7	1.7	13	2	1.02	N4HULPA00007
CF-P1	CF-VZSU28 CF-VZSU28JS	2UR18650F-MSD-P1R1	UR18650F	3.7	7.4	2.1	2.1	16	2	1.26	N4HULPA00010 N4HULPA00012
CF-P1	CF-VZSU28 CF-VZSU28W	2UR18650F-MSD-P1R2	UR18650F	3.7	7.4	2.1	2.1	16	2	1.26	N4HULPA00011 N4HULPA00014
CF-P2	CF-VZSU33	CGA-E/109BA	CGA103450A	3.6	3.6	1.95	1.85	6.7	1	0.56	CGA-E/109BA
CF-R1/T1/R2/T2	CF-VZSU24A CF-VZSU24AU	2UR18650F-2-MDS-T2	UR18650F	3.7	7.4	4.4	4.2	32	4	2.52	N4HULRA00009
CF-R1/T1/R2/T2	CF-VZSU24AR	2UR18650F-2-MDST2C	UR18650F	3.7	7.4	4.4	4.2	32	4	2.52	N4HULRA00010
CF-R1/T1/R2/T2	CF-VZSU24B CF-VZSU24BU	2UR18650F-2-MDST2R 2UR18650F-2-MDS-12	UR18650F	3.7	7.4	4.8	4.6	35	6	2.76	N4HULSA00006 N4HULSA00011
CF-R3	CF-VZSU32 CF-VZSU32U	2UR18650F-3-MDS-R3 2UR18650F-3-MDS-6	UR18650F	3.7	7.4	7.2	6.9	52	6	4.14	N4HULTA00014 N4HULTA00020
CF-R3	CF-VZSU32R	2UR18650F-3-MDSR3C	UR18650F	3.7	7.4	7.2	6.9	52	6	4.14	N4HULTA00017
CF-R4/R5	CF-VZSU42 CF-VZSU42U	2UR18650F-3-MDS-R4 2UR18650F-3-MDS-8	UR18650F	3.7	7.4	7.8	7.5	56	6	4.50	N4HULTA00016 N4HULTA00022
CF-R4/R5	CF-VZSU42R	2UR18650F-3-MDSR4C	UR18650F	3.7	7.4	7.8	7.5	56	6	4.50	N4HULTA00018
CF-R6/R7/R8	CF-VZSU49 CF-VZSU49U	NCR-B/402B	NCR18650	3.6	7.2	5.8	5.4	39	4	3.24	NCR-B/402B
CF-R6/R7/R8	CF-VZSU54U	NCR-B/404B	NCR18650	3.6	7.2	5.8	5.4	39	4	3.24	NCR-B/404B
CF-R9	CF-VZSU49AJS	NCR-B/426A NCR-B/426B	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	NCR-B/426A NCR-B/426B
CF-R9	CF-VZSU54AJS	NCR-B/427A NCR-B/427B	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	NCR-B/427A NCR-B/427B
CF-RZ4/RZ5/RZ6	CF-VZSU0EJS	BJ-F520001AA BJ-F520005AA BJ-F520005BA	UF604462SW	3.8	7.6	4.86	4.74	36	4	2.84	N4HULSA00023 N4HULSA00042 N4HULSA00050
CF-RZ4/RZ5/RZ6	CF-VZSU0FJS	BJ-F520002AA BJ-F520006AA BJ-F520006BA	UF604462SW	3.8	7.6	4.86	4.74	36	4	2.84	N4HULSA00024 N4HULSA00041 N4HULSA00051
CF-RZ5	CF-VZSU0TJS	BJ-F520010AA	UF604462SW	3.8	7.6	4.86	4.74	36	4	2.84	N4HULSA00054
CF-S8/N8/S9/N9/S10/N10	CF-VZSU59U	NCR-B/807A	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	NCR-B/807A
CF-S8/N8/S9/N9/S10/N10	CF-VZSU60U	NCR-B/806A	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	NCR-B/806A
CF-S8/N8/S9/N9/S10/N10	CF-VZSU61U	NCR-B/805A NCR-B/805C NCR-B/805D	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	NCR-B/805A N4HUNSA00065 N4HUNSA00046
CF-S8/N8/S9/N9/S10/N10	CF-VZSU61UR	NCR-B/805E	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	N4HULUA00017
CF-S8/N8/S9/N9/S10/N10	CF-VZSU62U	NCR-B/420A	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	NCR-B/420A
CF-S8/N8/S9/N9/S10/N10	CF-VZSU64U	NCR-B/418A NCR-B/418B	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	NCR-B/418A N4HULSA00048
CF-S8/N8/S9/N9/S10/N10	CF-VZSU64JS	NCR-B/418C	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	N4HULSA00047
CF-S8/N8/S9/N9/S10/N10	CF-VZSU64R	NCR-B/418D	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	N4HULSA00055
CF-S10/N10 (JP)	CF-VZSU60AJS	NCR-B/821A	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	NCR-B/821A
CF-S10/N10 (JP)	CF-VZSU61AJS	NCR-B/820A NCR-B/820E	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	NCR-B/820A N4HULUA00025
CF-S10/N10 (JP)	CF-VZSU64AJS	NCR-B/434A	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	NCR-B/434A
CF-S10/N10 (CN)	CF-VZSU60AR	NCR-B/821B	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00007
CF-S10/N10 (CN)	CF-VZSU61AR	NCR-B/820B	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00006
CF-S10/N10 (CN)	CF-VZSU64AR	NCR-B/434B	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00026
CF-S10/N10 (TW)	CF-VZSU60AQ	NCR-B/821C	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00012

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
CF-S10/N10 (TW)	CF-VZSU61AQ	NCR-B/820C	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00013
CF-S10/N10 (TW)	CF-VZSU64AQ	NCR-B/434C	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00038
CF-S21/S22/S23	CF-VZSU01 CF-VZSU01J	CGP-E/605	CGP345010	3.6	10.8	2.6	2.6	28	6	2.34	CGP-E/605
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU75JS	NCR-B/440AE	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	NCR-B/440AE
		BJ-A320043AA BJ-A320043EA BJ-A320043FA	NCR18650BF	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00027 N4HULSA00057 N4HULSA00071
		2NCR18650B2-B002A BJ-A3200012BA	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00013 N4HULSA00049
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU75R CF-VZSU75RR CF-VZSU75RT CF-VZSU75RS	2NCR18650B2-B002B BJ-A340020AB BJ-A340020BB BJ-A340020CB	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00015 N4HULSA00022 N4HULSA00032 N4HULSA00058
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU76JS	NCR-B/824AE	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	NCR-B/824AE
		BJ-A320041AA BJ-A320041EA BJ-A320041FA	NCR18650BF	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00008 N4HULUA00020 N4HULUA00023
		2NCR18650B4-B001A BJ-A3200014BA	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00001 N4HULUA00018
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU76R CF-VZSU76RR CF-VZSU76RT CF-VZSU76RS	2NCR18650B4-B001B BJ-A380002AB BJ-A380002BB BJ-A380002CB	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00002 N4HULUA00005 N4HULUA00011 N4HULUA00019
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU78JS	NCR-B/441AE	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	NCR-B/441AE
		BJ-A320044AA BJ-A320044DA BJ-A320044EA	NCR18650BF	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00028 N4HULSA00059 N4HULSA00072
		BJ-A320052AA BJ-A320044CA	NCR18650B	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00030 N4HULSA00039
CF-SX1/NX1/SX2/NX2 /SX3/NX3/SX4/NX4	CF-VZSU79JS	NCR-B/825AE	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	NCR-B/825AE
		BJ-A320042AA BJ-A320042DA BJ-A320042EA	NCR18650BF	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00009 N4HULUA00021 N4HULUA00024
		BJ-A320053AA BJ-A320042CA	NCR18650B	3.6	7.2	13.6	12.8	93	8	7.68	N4HULUA00010 N4HULUA00014
CF-SX3/NX3	CF-VZSU98JS	BJ-A320033AA	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	N4HULSA00018
CF-SX3/NX3	CF-VZSU99JS	BJ-A320032AA	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	N4HULUA00003
CF-SX3/NX3	CF-VZSU0AJS	BJ-A320035AA	NCR18650A	3.6	7.2	6.2	5.8	42	4	3.48	N4HULUA00019
CF-SX3/NX3	CF-VZSU0BJS	BJ-A320034AA	NCR18650A	3.6	7.2	12.4	11.6	84	8	6.96	N4HULUA00004
CF-SZ5/SZ6	CF-VZSU0MJS	BJ-A320056AA BJ-A320056CA	NCR18650BF	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00031 N4HULSA00052
		BJ-A320056DA BJ-A320056FA	NCR18650BF	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00065 N4HULSA00069
CF-SZ5/SZ6	CF-VZSU0NJS	BJ-A320055AA BJ-A320055CA	NCR18650BF	3.6	7.2	10.2	9.6	70	6	5.76	N4HULTA00030 N4HULTA00043
CF-SZ5/SZ6	CF-VZSU0NR	BJ-A320055DA	NCR18650BF	3.6	7.2	10.2	9.6	70	6	5.76	N4HULTA00049
CF-SZ5/SZ6	CF-VZSU0RJS	BJ-A320063AA BJ-A320063CA	NCR18650BF	3.6	7.2	6.8	6.4	47	4	3.84	N4HULSA00033 N4HULSA00053
CF-SZ5/SZ6	CF-VZSU0SJS	BJ-A320062AA BJ-A320062CA	NCR18650BF	3.6	7.2	10.2	9.6	70	6	5.76	N4HULTA00032 N4HULTA00044
CF-T4/T5	CF-VZSU39 CF-VZSU39U CF-VZSU37 CF-VZSU37U	CGR-B/437C CGR-B/437D	CGR18650E	3.7	7.4	5.1	4.84	36	4	2.90	CGR-B/437C CGR-B/437D
		CGR-B/979C CGR-B/979D 3CGR18650E3-B001A	CGR18650E	3.7	11.1	7.65	7.26	81	9	6.53	CGR-B/979C CGR-B/979D N4HUNTA00024
CF-T7/T8/W7/W8/T9/W9	CF-VZSU52JS	NCR-B/304C	NCR18650	3.6	10.8	2.9	2.7	30	3	2.43	NCR-B/304C
CF-T7/T8/W7/W8/T9/W9	CF-VZSU52AJS	NCR-B/304G NCR-B/304J	NCR18650	3.6	10.8	2.9	2.7	30	3	2.43	NCR-B/304G NCR-B/304J
CF-T7/T8/W7/W8/T9/W9	CF-VZSU52CJS	NCR-B/304K	NCR18650	3.6	10.8	2.9	2.7	30	3	2.43	NCR-B/304K
CF-T7/T8/W7/W8/T9/W9	CF-VZSU52W	NCR-B/304H	NCR18650	3.6	10.8	2.9	2.7	30	3	2.43	NCR-B/304H
CF-T7/T8/W7/W8/T9/W9	CF-VZSU51JS	NCR-B/609C	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/609C
CF-T7/T8/W7/W8/T9/W9	CF-VZSU51AJS	NCR-B/609H NCR-B/609L	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/609H NCR-B/609L
CF-T7/T8/W7/W8/T9/W9	CF-VZSU51CJS	NCR-B/609M	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/609M
CF-T7/T8/W7/W8/T9/W9	CF-VZSU51W	NCR-B/609J 3NCR18650T2-B008A 3NCR18650T2-B008B	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/609J N4HUNSA00022 N4HUNSA00037
CF-T7/T8/W7/W8/T9/W9	CF-VZSU51R	NCR-B/609K	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/609K
CF-T7/T8/W7/W8/T9/W9	CF-VZSU57JS	NCR-B/616B NCR-B/616C	NCR18650	3.6	10.8	5.8	5.4	59	6	4.86	NCR-B/616B NCR-B/616C
CF-U1/H1	CF-VZSU53W	NCR-B/202A NCR-B/202B NCR-B/202BA 2NCR18650T-B00CA NCR-B/202H NCR-B/202K	NCR18650	3.6	7.2	2.9	2.75	20	2	1.65	NCR-B/202A NCR-B/202B NCR-B/202BA N4HULQA00007 N4HULQA00016 N4HULQA00033
CF-U1/H1	CF-VZSU53JS	NCR-B/202C NCR-B/202J	NCR18650	3.6	7.2	2.9	2.7	20	2	1.62	NCR-B/202C N4HULQA00017
CF-U1/H1	CF-VZSU53R	NCR-B/202D	NCR18650	3.6	7.2	2.9	2.7	20	2	1.62	NCR-B/202D
CF-U1/H1	CF-VZSU53Q	NCR-B/202F	NCR18650	3.6	7.2	2.9	2.7	20	2	1.62	NCR-B/202F
CF-H2	CF-VZSU53AW	NCR-B/206A NCR-B/206F NCR-B/206J	NCR18650B	3.6	7.2	3.4	3.2	23	2	1.92	NCR-B/206A N4HULQA00018 N4HULQA00031
CF-H2	CF-VZSU53AJS	NCR-B/206B NCR-B/206G	NCR18650B	3.6	7.2	3.4	3.2	23	2	1.92	NCR-B/206B N4HULQA00019

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
CF-H2	CF-VZSU53AR	NCR-B/206C NCR-B/206H	NCR18650B	3.6	7.2	3.4	3.2	23	2	1.92	NCR-B/206C N4HULQA00020
CF-H2	CF-VZSU53AQ	2NCR18650B-B009A NCR-B/206E	NCR18650B	3.6	7.2	3.4	3.2	23	2	1.92	N4HULQA00006 N4HULQA00014
CF-VZSU1428W/JS CF-VZSU1473U	CF-VZSU14B	CGA-E/608D	CGA103450A	3.7	11.1	3.6	3.4	38	6	3.06	CGA-E/608D
CF-VZSU1430U	CF-VZSU14C	CGA-E/621C	CGA103450A	3.7	11.1	3.9	3.7	42	6	3.33	CGA-E/621C
CF-VZSU1431U	CF-VZSU14D	CGA-E/621D BJ-C130006BA	CGA103450A	3.7	11.1	3.9	3.7	42	6	3.33	CGA-E/621D N4HUNRA00046
CF-W2/Y2	CF-VZSU27A CF-VZSU27AU	CGR-B/6A6EA CGR-B/6A6GA 2CGR18650D3-B004A	CGR18650D	3.7	7.4	7.05	6.66	50	6	4.00	CGR-B/6A6EA CGR-B/6A6GA N4HULTA00024
CF-W4	CF-VZSU40A CF-VZSU40AU	2UR18650F-3-MDS-W4 2UR18650F-3-MDS-7	UR18650F	3.7	7.4	7.8	7.5	56	6	4.50	N4HULTA00015 N4HULTA00021 N4HULTA00026
CF-W4	CF-VZSU40AR	2UR18650F-3-MDSW4C	UR18650F	3.7	7.4	7.8	7.5	56	6	4.50	N4HULTA00019
CF-W5	CF-VZSU47 CF-VZSU47AU	NCR-B/602D NCR-B/602F 3NCR18650T2-B00YA	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/602D NCR-B/602F N4HUNSA00040
CF-W5	CF-VZSU47R	NCR-B/602E	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/602E
CF-XZ6	2-424866S-B01	BJ-MB20001AA	UF424866ST	3.8	7.6	1.88	1.77	14	2	1.06	N4HULPA00028
CF-XZ6	2-424866S2-B01	BJ-MB20002AA	UF424866ST	3.8	7.6	3.76	3.54	27	4	2.12	N4HULRA00029
CF-XZ6	CF-VZSU0WU	BJ-HM20001AA	UF515761ST	3.8	7.6	2.72	2.6	20	2	1.56	N4HULQA00035
CF-XZ6	CF-VZSU0XU	BJ-HM20002AA	UF515761ST	3.8	7.6	5.44	5.2	40	4	3.12	N4HULSA00060
CF-XZ6	CF-VZSU0YU	BJ-HM20003AA	UF515761ST	3.8	7.6	2.72	2.6	20	2	1.56	N4HULQA00037
CF-XZ6	CF-VZSU0ZU	BJ-HM20004AA	UF515761ST	3.8	7.6	5.44	5.2	40	4	3.12	N4HULSA00063
CF-Y4	CF-VZSU41 CF-VZSU41U	CGR-B/6D2E CGR-B/6D2G	CGR18650E	3.7	7.4	7.65	7.26	54	6	4.36	CGR-B/6D2E CGR-B/6D2G
CF-Y4	CF-VZSU41R	CGR-B/6D2F	CGR18650E	3.7	7.4	7.65	7.26	54	6	4.36	CGR-B/6D2F
CF-Y5/Y7/Y8/Y9	CF-VZSU45 CF-VZSU45U	NCR-B/601D NCR-B/601F 3NCR18650T2-B00XA	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/601D NCR-B/601F N4HUNRA00039
CF-Y5/Y7/Y8/Y9	CF-VZSU45R	NCR-B/601E	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	NCR-B/601E
DFWW95F0021	CF-VZSU66U	2UR18650Z2-B002A	UR18650ZTA	3.7	7.4	6	5.7	43	4	3.42	N4HULSA00014
DFWW95F0040	CF-VZSU48	3NCR18650T2-B00MA	NCR18650	3.55	10.65	5.7	5.4	58	6	4.86	N4HUNSA00030
DFWW95F0042	CF-VZSU72U	3UR18650A2-B00KA	UR18650A	3.6	10.8	4.5	4.2	46	6	3.78	N4HUNQA00013
DFWW95F0051	CF-VZSU46AU	NCR-B/922BE	NCR18650	3.55	10.65	8.55	8.1	87	9	7.29	NCR-B/922BE
DFWW95F0063 DFWW95G0031 DFWW95G0032	FZ-VZSU74U	2UF484462-3-T0775	UF484462S	3.7	7.4	4.77	4.59	35	6	2.75	-
DFWW95G0034	FZ-VZSU84AU	BJ-F630036AA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00040
DFWW95G0035	FZ-VZSU84AU	BJ-F630036AA BJ-F630036DA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00040 N4HUNRA00068
DFWW95G0036	FZ-VZSU84AU	BJ-F630036DA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00068
DFWW95G0037	FZ-VZSU84A2U	BJ-F630036GA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00074
DFWW95G0038	FZ-VZSU84A2R	BJ-F630036JA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00075
DFWW95G0039	FZ-VZSU84A2K	BJ-F630036HA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00076
DFWW95G0040	FZ-VZSU89A2U	BJ-F630039CA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00077
DFWW95G0041	FZ-VZSU96A2U	BJ-F630038CA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00078
DFWW95G0042	FZ-VZSU97A2U	BJ-F630040CA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00079
FZ-A1	FZ-VZSU74U	2UF484462-3-T0775	UF484462S	3.7	7.4	4.77	4.59	35	6	2.75	-
FZ-G1	FZ-VZSU84U	3NCA653864-2-B001A BJ-F930003DA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00011 N4HUNRA00056
FZ-G1	FZ-VZSU84R	3NCA653864-2-B001B BJ-F930006AA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00016 N4HUNRA00036
FZ-G1	FZ-VZSU84K	3NCA653864-2-B001C BJ-F930008BA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00018 N4HUNRA00025
FZ-G1	FZ-VZSU84AU FZ-VZSU84A2U FZ-VZSU84AU7 FZ-VZSU84AUZ	BJ-F630036AA BJ-F630036DA BJ-F630036GA BJ-F630036KA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00040 N4HUNRA00068 N4HUNRA00074 N4HUNRA00081
FZ-G1	FZ-VZSU84AR FZ-VZSU84A2R	BJ-F630036CA BJ-F630036FA BJ-F630036JA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00041 N4HUNRA00069 N4HUNRA00075
FZ-G1	FZ-VZSU84AK FZ-VZSU84A2K	BJ-F630036BA BJ-F630036EA BJ-F630036HA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00042 N4HUNRA00073 N4HUNRA00076
FZ-G1	FZ-VZSU88U FZ-VZSU88U2	3NCR18650A3-B004A BJ-A330061CA BJ-A330061GA	NCR18650A	3.6	10.8	9.3	8.7	94	9	7.83	N4HUNTA00019 N4HUNTA00039 N4HUNTA00058
FZ-G1	FZ-VZSU88R	BJ-A330061DA BJ-A330061HA	NCR18650A	3.6	10.8	9.3	8.7	94	9	7.83	N4HUNTA00042 N4HUNTA00059
FZ-G1	FZ-VZSU89U	3NCA653864-2-B002A	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00017
FZ-G1	FZ-VZSU89AU FZ-VZSU89A2U	BJ-F630039AA BJ-F630039BA BJ-F630039CA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00043 N4HUNRA00071 N4HUNRA00077
FZ-G1	FZ-VZSU96U	BJ-F930003BA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00022
FZ-G1	FZ-VZSU96AU FZ-VZSU96A2U	BJ-F630038AA BJ-F630038BA BJ-F630038CA BJ-F630038DA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00044 N4HUNRA00070 N4HUNRA00078 N4HUNRA00082
FZ-G1	FZ-VZSU97U	BJ-F930012AA BJ-F930016AA BJ-F930016BA	NCA653864	3.6	10.8	4.4	4.1	45	6	3.69	N4HUNRA00027 N4HUNRA00039 N4HUNRA00062

Model Information			Cell		Battery Pack						Product code
Panasonic Toughbook Model Name	Battery Pack Model Name	Product Model Name	Cell Name	Nominal Voltage (V)	Rating Voltage (V)	Rating Capacity Typ.(Ah)	Rating Capacity Min.(Ah)	Watt-hour Rating	Cell number	Lithium equivalent content(g)	
FZ-G1	FZ-VZSU97AU FZ-VZSU97A2U	BJ-F630040AA BJ-F630040BA BJ-F630040CA	UF653864S	3.7	11.1	4.2	4.08	46	6	3.67	N4HUNRA00045 N4HUNRA00072 N4HUNRA00079
FZ-G1	2-622944-B01C	BJ-EM20001BA BJ-EM20001CA	NCA622944	3.6	7.2	1.09	1.03	7.5	2	0.62	N4HULNA00003 N4HULNA00005
FZ-M1/B2/R1	FZ-VZSU94W	BJ-CG20001AA BJ-CG20001HA BJ-CG20001GA BJ-CG20001MA	NCA903864A	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00012 N4HULQA00028 N4HULQA00032 N4HULQA00041
FZ-M1/B2/R1	FZ-VZSU94JS	BJ-CG20001BA BJ-CG20001JA BJ-CG20001NA	NCA903864A	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00013 N4HULQA00029 N4HULQA00042
FZ-M1/B2/R1	FZ-VZSU94R	BJ-CG20001CA BJ-CG20001EA BJ-CG20001KA BJ-CG20001PA	NCA903864A	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00015 N4HULQA00022 N4HULQA00030 N4HULQA00043
FZ-M1/B2/R1	FZ-VZSU94Q	BJ-CG20001DA BJ-CG20001QA	NCA903864A	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00012 N4HULQA00044
FZ-M1/B2/R1	FZ-VZSU94K	BJ-CG20001LA BJ-CG20001RA	NCA903864A	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00036 N4HULQA00045
FZ-M1/B2/R1	FZ-VZSU95W	BJ-A320036AA BJ-A320036EA BJ-A320036DA BJ-A320036JA	NCR18650G	3.6	7.2	7.1	6.8	49	4	4.08	N4HULQA00013 N4HULTA00037 N4HULTA00041 N4HULTA00050
FZ-M1/B2/R1	FZ-VZSU95JS	BJ-A320036BA BJ-A320036FA BJ-A320036KA	NCR18650G	3.6	7.2	7.1	6.8	49	4	4.08	N4HULTA00028 N4HULTA00038 N4HULTA00051
FZ-M1/B2/R1	FZ-VZSU95R	BJ-A320058CA BJ-A320036GA BJ-A320036LA	NCR18650G	3.6	7.2	7.1	6.8	49	4	4.08	N4HULTA00023 N4HULTA00039 N4HULTA00052
FZ-M1/B2/R1	FZ-VZSU95Q	BJ-A320036HA BJ-A320036MA	NCR18650G	3.6	7.2	7.1	6.8	49	4	4.08	N4HULTA00048 N4HULTA00053
FZ-M1/B2/R1	FZ-VZSU0HW	BJ-CG20003AA BJ-CG20003BA	NCA903864	3.6	7.2	3.22	3.05	22	2	1.83	N4HULQA00021 N4HULQA00046
FZ-M1/B2/R1	FZ-VZSU0JW	BJ-A320045AA BJ-A320045CA BJ-A320045BA BJ-A320045DA	NCR18650G	3.6	7.2	7.1	6.8	49	4	4.08	N4HULTA00029 N4HULTA00040 N4HULTA00042 N4HULTA00054
FZ-Q1/Q2	2-604462S2-B04	BJ-F520009AA	UF604462SW	3.8	7.6	4.86	4.74	36	4	2.84	N4HULSA00040
FZ-X1/E1	FZ-VZSUX100J	1UF575673S2-B001B 1UF575673S2-B001C 1UF575673S2-B001D	UF575673SX	3.8	3.8	6.4	6.2	24	2	1.86	PGLT1011ZAJ1 PGLT1011ZBJ1 PGLT1011ZCJ1
FZ-N1/F1	FZ-VZSUN110U	1UF575673S-B007A 1UF575673S-B007B 1UF575673S-B007D	UF575673SX	3.8	3.8	3.2	3.1	12	1	0.93	DHLT1002ZA/J1 DHLT1002ZB/J1 DHLT1002ZD/J1
FZ-N1/F1	FZ-VZSUN120U	1UF575673S2-B001B 1UF575673S2-B001C 1UF575673S2-B001D	UF575673SX	3.8	3.8	6.4	6.2	24	2	1.86	PGLT1011ZAJ1 PGLT1011ZBJ1 PGLT1011ZCJ1
JT-B1	JT-B1-BT000U	1UF703450F4-B001A 1UF703450F4-B002A BJ-CA10031AA BJ-CA10030AA	UF703450F	3.7	3.7	5.72	5.72	22	4	1.72	PGLT1002ZA/J1 PGLT1003ZA/J1 PGLT1002ZC/J1 PGLT1003ZD/J1
JT-H580	JT-H580BT-00	1UF424261F-3-PNC	UF424261F	3.7	3.7	3.9	3.9	15	3	1.17	PGLZ1016ZA/J1
JT-H581	JT-H581BT-00	1UF464462F4-N001O	UF464462F	3.7	3.7	5.84	5.84	22	4	1.75	PGLZ1029ZB/J1
UT-MB5 FZ-Y1	3UF484462S2	3UF484462S2-B001A BJ-L730001AC	UF484462S	3.7	11.1	3.18	3.06	34	6	2.75	N4HUNQA00004 N4HUNQA00017
UT-MA6 FZ-Y1	3UF484462S3	3UF484462S3-B001A BJ-L710011AC BJ-L710011AD	UF484462S	3.7	11.1	4.77	4.59	51	9	4.13	N4HUNRA00020 N4HUNRA00057 N4HUNRA00067

Last 2 digits XX in model number "CF-VZSUxxxXX " means the destination, where

"R ": Taiwan, China

"R2": HongKong, China

"Q ": Taiwan

"K ": Korea

"E ": Europe

"J ", "JS": Japan

"W ": Universal except Japan or China

"U ", or " ": Universal except China

"Y ": Asia



## Safety data sheet for product

### 1. PRODUCT AND COMPANY IDENTIFICATION

- Product name: Lithium ion rechargeable battery cell
- Product code: None  
(All models Sanyo manufactured and whose capacity is less than or equal to 5.4Ah, including the cell branded as Panasonic, excluding the cell whose shape is prismatic and two or more short / middle / long side excess 12mm/85mm/110mm.)
- Company name: Sanyo Electric Co., Ltd., Panasonic group
- Address: 222-1, Kaminaizen, Sumoto City, Hyogo, Japan
- Telephone number: +81-799-24-4111
- Fax number: +81-799-23-2879
- Emergency telephone number: [Daytime of business day] +81-799-23-3931  
[Night and holiday] +81-799-24-4131

### 2. HAZARDS IDENTIFICATION

For the battery cell, chemical materials are stored in a hermetically sealed metal or metal laminated plastic case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.

However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, hazardous materials may be released.

Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

- GHS classification: Not available  
(This product is outside the scope of GHS system since it's considered as an "article".)
- Most important hazard and effects  
Human health effects:  
Inhalation: The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract.  
Skin contact: The steam of the electrolyte stimulates a skin. The electrolyte skin contact causes a sore and stimulation on the skin.  
Eye contact: The steam of the electrolyte stimulates eyes. The electrolyte eye contact causes a sore and stimulation on the eye. Especially, substance that causes a strong inflammation of the eyes is contained.  
Environmental effects: Since a battery cell remains in the environment, do not throw out it into the environment.
- Specific hazards:  
If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride.  
Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

- Substance or preparation: Preparation
- Information about the chemical nature of product: \*1

Portion	Material name	CAS No.	Concentration range (wt %)
Positive electrode	Lithium transition metal oxidate ( $\text{Li}[\text{M}]_m[\text{O}]_n \cdot 2$ )	12190-79-3 12031-65-1 12057-17-9 182442-95-1 207803-51-8	20~60
Positive electrode's base	Aluminum	7429-90-5	1~10
Negative electrode	Carbon	7782-42-5 7440-44-0	10~30
Negative electrode's base	Copper	7440-50-8	1~15
Electrolyte	Ethyl methyl carbonate Diethyl carbonate Ethylene carbonate Lithium hexafluorophosphate	623-53-0 105-58-8 96-49-1 21324-40-3	5~25
Outer case	Aluminum, iron, aluminum laminated plastic	7429-90-5 7439-89-6	1~30

\*1 Not every product includes all of these materials.

\*2 The letter M means transition metal and candidates of M are Co, Mn, Ni and Al. One compound includes one or more of these metals and one product includes one or more of the compounds. The letter m and n means the number of atoms.

**4. FIRST-AID MEASURES****Spilled internal cell materials**

- Inhalation:  
Make the victim blow his/her nose, gargle. Seek medical attention if necessary.
- Skin contact:  
Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.
- Eye contact:  
Do not rub one's eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

**A battery cell and spilled internal cell materials**

- Ingestion:  
Wash out mouth thoroughly. Do not make the victim vomit, unless instructed by medical personnel. Seek medical attention immediately.

**5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media: Plenty of water, carbon dioxide gas, nitrogen gas, chemical powder fire extinguishing medium and fire foam.
- Specific hazards: Corrosive gas may be emitted during fire.
- Specific methods of fire-fighting: When the battery burns with other combustibles simultaneously, take fire-extinguishing method which correspond to the combustibles. Extinguish a fire from the windward as much as possible.
- Special protective equipment for firefighters:
  - Respiratory protection: Respiratory equipment of a gas cylinder style or protection-against-dust mask
  - Hand protection: Protective gloves
  - Eye protection: Goggle or protective glasses designed to protect against liquid splashes
  - Skin and body protection: Protective cloth

## 6. ACCIDENTAL RELEASE MEASURES

Spilled internal cell materials, such as electrolyte leaked from a battery cell, are carefully dealt with according to the followings.

- Precautions for human body:  
Remove spilled materials with protective equipment (protective glasses and protective gloves). Do not inhale the gas as much as possible. Moreover, avoid touching with as much as possible.
- Environmental precautions: Do not throw out into the environment.
- Method of cleaning up: The spilled solids are put into a container. The leaked place is wiped off with dry cloth.
- Prevention of secondary hazards: Avoid re-scattering. Do not bring the collected materials close to fire.

## 7. HANDLING AND STORAGE

- Handling suggestions
  - Do not connect the positive terminal to the negative terminal with electrical wire or chain.
  - Avoid polarity reverse connection when installing the battery to an instrument.
  - Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer.
  - Do not damage or remove the external tube.
  - Keep the battery away from heat and fire.
  - Do not disassemble or reconstruct the battery; or solder the battery directly.
  - Do not give a mechanical shock or deform.
  - Do not use unauthorized charger or other charging method. Terminate charging when the charging process doesn't end within specified time.
- Storage
  - Do not store the battery with metalware, water, seawater, strong acid or strong oxidizer.
  - Make the charge amount 30~50% then store at room temperature or less (temperature= -20~35 degree C) in a dry (humidity: 45~85%) place. Avoid direct sunlight, high temperature, and high humidity.
  - Use insulative and adequately strong packaging material to prevent short circuit between positive and negative terminal when the packaging breaks during normal handling. Do not use conductive or easy to break packaging material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (WHEN THE ELECTROLYTE LEAKS)

- Control parameters  
ACGIH has not been mentioned control parameter of electrolyte.
- Personal protective equipment
  - Respiratory protection: Respirator with air cylinder, dust mask
  - Hand protection: Protective gloves
  - Eye protection: Goggles or protective glasses designed to protect against liquid splashes
  - Skin and body protection: Working clothes with long sleeve and long trousers

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance
  - Physical state: Solid
  - Form: Cylindrical or Prismatic or Pouch (laminated)
  - Color: Metallic color or black (without tube if it has tube)
  - Odor: No odor

## 10. STABILITY AND REACTIVITY

- Stability: Stable under normal use
- Hazardous reactions occurring under specific conditions
  - Conditions to avoid: When a battery cell is exposed to an external short-circuit, crushes, deformation, high temperature above 100 degree C, it will be the cause of heat generation and ignition. Direct sunlight and high humidity.
  - Materials to avoid: Conductive materials, water, seawater, strong oxidizers and strong acids.
  - Hazardous decomposition products: Acrid or harmful gas is emitted during fire.

**11. TOXICOLOGICAL INFORMATION****Organic Electrolyte**

- Acute toxicity:  
LD<sub>50</sub>, oral - Rat 2,000mg/kg or more
- Irritating nature: Irritative to skin and eye

**12. ECOLOGICAL INFORMATION**

- Persistence/degradability:  
Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

**13. DISPOSAL CONSIDERATIONS**

- Recommended methods for safe and environmentally preferred disposal:

**Product (waste from residues)**

Specified collection or disposal of lithium ion battery is required by the law like as "battery control law" in several nations. Collection or recycle of the battery is mainly imposed on battery's manufacturer or importer in the nations recycle is required.

**Contaminated packaging**

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

**14. TRANSPORT INFORMATION**

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section 7-HANDLING AND STORAGE also.

**UN regulation**

- UN number: 3480 (3481 when the battery is contained in equipment or packed with equipment)
- Proper shipping name:  
Lithium ion batteries ("lithium ion batteries packed with equipment" or "lithium ion batteries contained in equipment")
- Class: 9 \*

*\* Although this product meets the criteria of "dangerous goods" and are classified as "lithium ion batteries", depending on the battery's total capacity in the packaging, etc., they may not be subject to the fully regulated provisions.*

**Regulation depends on region and transportation mode**

- Worldwide - Air transportation:  
ICAO TI/IATA-DGR [packing instruction 965 section IB or II]  
(When shipping batteries "packed with" or "contained in" equipment, use packing instruction 966 or 967 as appropriate.)
- Worldwide - Ocean transportation:  
IMO-IMDG Code [special provision 188]
- Europe - Ground transportation:  
ADR [special provision 188]

*\* Instructions or provisions in the box brackets are conditions to make the battery cell exempted from full regulation.*

**15. REGULATORY INFORMATION**

- Regulations specifically applicable to the product:  
Wastes Disposal and Public Cleaning Law [Japan]  
Law for Promotion of Effective Utilization of resources [Japan]  
US Department of Transportation 49 Code of Federal Regulations [USA]

*\* About overlapping regulations, please refer to Section 14-TRANSPORT INFORMATION.*

## 16. OTHER INFORMATION

- This safety data sheet is offered an agency who handles this product to handle it safely.
- The agency should utilize this safety data sheet effectively (put it up, educate person in charge) and take proper measures.
- ***The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.***
- This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

### Reference

Dangerous Goods Regulations – 59th Edition Effective 1 January 2018: International Air Transport Association (IATA)

IMDG Code – 2016 Edition: International Maritime Organization (IMO)

The European Agreement concerning the International Carriage of Dangerous Goods by Road – 2017:

The United Nations Economic Commission for Europe (UNECE)

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