

## 1. IMDG Coded Variant List (CVL)

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The IMDG Coded Variant List (CVL) is supplied by Exis Technologies as a free resource to assist companies in exchanging IMDG Code information in EDI messages such as BAPLIE and IFTMBF.

The provision of this IMDG Coded Variant List (CVL) is the result of a partnership with the SMDG Group who supply the manuals to define EDI messages in the maritime industry.

The CVL helps to overcome the ambiguities when identifying a variant within a single UN number that may occur when two companies exchange DG information. This exchange may be automatic using EDI files and it may also involve some manual procedure. These ambiguities can arise for a number of reasons, such as:

- Differences in the DG information held in the DG databases
- Layers of software in the transmission process that limits the information that can be exchanged automatically
- Different versions of the IMDG Code data, a consequence of different implementation times for new data when either a new IMDG Code amendment (implemented at any time within the transition year) or errata are released or because of different data from various sources

In the case of an EDI exchange, by using the CVL a receiving system can look for a match with its own substance data. If a match is found, then the substance data (i.e. variant) identified within the receiving system is the same variant used in the sending system to produce the EDI file.

In summary, the benefits are:

- Simplifies identification of a variant within a single UN number
- Removes ambiguities when exchanging EDI messages
- Provides common IMDG Code data to industry standard
- Contains all UN numbers which have IMDG Code variants
- Download file to integrate CVL with existing systems
- Continuously updated in line with new IMDG Code amendments and errata

## 2. Variant Code Structure

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A set of 4-character codes, each 4-character code describing a single variant, as follows:

Character	Valid Characters	Description
1	0, 1, 2, 3	The packing group Code 0 indicates there is no packing group
2	0 to 9 and A to Z	A sequence letter for the PSN, or 0 if there were no alternative PSNs
3 and 4	0 to 9 and A to Z	Two sequence letters for other information, for the cases where the variant is required because of differences in subrisks, packing instruction etc.

This structured code is preferred over a sequential number as it has the advantage that when changes to the IMDG Code force new variants for a UN number (UNNo), new variants can be placed at intermediate positions (if appropriate) in the variant list, rather than being placed at the end of the list having been assigned the next sequential number.

**Note: The UNNo and variant code combination is unique across all IMDG Code Amendments, i.e. a variant code will never be re-used for the same UNNo.**

This approach will make system maintenance easier and help to preserve EDI data exchange consistency between different systems.

### 3. Variant Code Examples

UN Number	Variant Code	Description	
1993	1000	Variants resulting from different Packing Groups I, II and III	
	2000		
	3000		
1170	2100	Packing Group II and 4 PSNs: ETHANOL ETHYL ALCOHOL ETHANOL SOLUTION ETHYL ALCOHOL SOLUTION	
	2200		
	2300		
	2400		
	3100	Packing Group III and 4 PSNs: ETHANOL ETHYL ALCOHOL ETHANOL SOLUTION ETHYL ALCOHOL SOLUTION	
			3200
			3300
			3400
0004	0001	Variants resulting from different Packing Instructions: P112(a) - Solid wetted, 1.1D P112(b) - Solid dry, other than powder 1.1D P112(c) - Solid dry powder 1.1D	
	0002		
	0003		

### 4. Variant Code Distribution

The information will be made available as a CSV file suitable for import into MS Access, MS Excel or any application or database able to import a CSV file.

The first record will have field names. The second and subsequent records will each represent a single variant.

Field Name	Format	Description
UNNo	4 digits	UN number
Variant	4 alphanumeric characters	Variant Code
Name	Free Text	Proper Shipping Name
VarDesc	Free Text	Human readable variant description
ValidFrom	5 digits	Version of the data corresponding to when this variant is first valid to be used.

		<p>The ValidFrom field is a 5-digit numeric value with the following structure:</p> <p><b>Characters 1 and 2:</b> 2 digit IMDG Code Amendment, e.g. 35, 36, 37  <b>Character 3:</b> Errata or Note Verbale, e.g., 0, 1, 2  <b>Characters 4 and 5:</b> 2 digit number indicating the version of the data</p> <p>Examples:  <b>36000</b> – IMDG Code Amendment 36 (<b>36</b>), pre any Errata or Note Verbale (<b>0</b>), initial data version (<b>00</b>)  <b>36001</b> – IMDG Code Amendment 36 (<b>36</b>), pre any Errata or Note Verbale (<b>0</b>), data version (<b>01</b>)  <b>36100</b> – IMDG Code Amendment 36 (<b>36</b>), first Errata or Note Verbale (<b>1</b>), initial data version (<b>00</b>)  <b>36101</b> – IMDG Code Amendment 36 (<b>36</b>), first Errata or Note Verbale (<b>1</b>), data version (<b>01</b>)</p> <p>This field always has a value.</p>
ValidTo	5 digits	<p>Version of the data corresponding to when this variant is last valid to be used.</p> <p>The ValidTo field is a 5-digit numeric value with a structure identical to that used for the ValidFrom field.</p> <p>If this field has no value it indicates that the variant is still valid in the latest Amendment (and errata, if any) of the IMDG Code.</p>

Using the example UNNos in item 2 above, their entries in the CSV file would be,

i) Using vertical bar (|) as the delimiter (no text qualifier is needed):

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UNNo|Variant|Name|VarDesc|ValidFrom|ValidTo
1993|1000|FLAMMABLE LIQUID, N.O.S.|Packing group I.|35100|
1993|2000|FLAMMABLE LIQUID, N.O.S.|Packing group II.|35100|
1993|3000|FLAMMABLE LIQUID, N.O.S.|Packing group III.|35100|
1170|2100|ETHANOL|Ethanol. Packing group II.|35100|
1170|2200|ETHANOL SOLUTION|Ethanol solution. Packing group II.|35100|
1170|2300|ETHYL ALCOHOL|Ethyl alcohol. Packing group II.|35100|
1170|2400|ETHYL ALCOHOL SOLUTION|Ethyl alcohol solution. Packing group II.|35100|
1170|3100|ETHANOL|Ethanol. Packing group III.|35100|
1170|3200|ETHANOL SOLUTION|Ethanol solution. Packing group III.|35100|
1170|3300|ETHYL ALCOHOL|Ethyl alcohol. Packing group III.|35100|
1170|3400|ETHYL ALCOHOL SOLUTION|Ethyl alcohol solution. Packing group III.|35100|
0004|0001|AMMONIUM PICRATE|Solid wetted.|35100|
0004|0002|AMMONIUM PICRATE|Solid dry, other than powder.|35100|
0004|0003|AMMONIUM PICRATE|Solid dry powder.|35100|
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ii) Using comma (,) as the delimiter and double quote (") as the text qualifier:

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"UNNo","Variant","Name","VarDesc","ValidFrom","ValidTo"
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"1993","1000","FLAMMABLE LIQUID, N.O.S.,"Packing group I.,"35100",""
"1993","2000","FLAMMABLE LIQUID, N.O.S.,"Packing group II.,"35100",""
"1993","3000","FLAMMABLE LIQUID, N.O.S.,"Packing group III.,"35100",""
"1170","2100","ETHANOL","Ethanol. Packing group II.,"35100",""
"1170","2200","ETHANOL SOLUTION","Ethanol solution. Packing group II.,"35100",""
"1170","2300","ETHYL ALCOHOL","Ethyl alcohol. Packing group II.,"35100",""
"1170","2400","ETHYL ALCOHOL SOLUTION","Ethyl alcohol solution. Packing group II.,"35100",""
"1170","3100","ETHANOL","Ethanol. Packing group III.,"35100",""
"1170","3200","ETHANOL SOLUTION","Ethanol solution. Packing group III.,"35100",""
"1170","3300","ETHYL ALCOHOL","Ethyl alcohol. Packing group III.,"35100",""
"1170","3400","ETHYL ALCOHOL SOLUTION","Ethyl alcohol solution. Packing group III.,"35100",""
"0004","0001","AMMONIUM PICRATE","Solid wetted.,"35100",""
"0004","0002","AMMONIUM PICRATE","Solid dry, other than powder.,"35100",""
"0004","0003","AMMONIUM PICRATE","Solid dry powder.,"35100",""

In addition to supplying the above data in a separate data file, the details will also be included in the full Dangerous Goods List provided by Exis to its data supply customers.

## 5. EDI

A recent document, "IFTMBFv1-3 (GA).pdf", describes the GA EDICOM Version 1.3 IFTMBF Firm Booking Message, and includes a number of proposed changes.

One proposed change describes the syntax for incorporating the UNNo variant details in an IFTMBF message.

At the DGS level (Segment Group 16, Goods Item Details) an optional FTX segment can be included.

`FTX+AAC++UNNOSUFFIX+<variant>`

For example,

`FTX+AAC++UNNOSUFFIX+0201`

Although including the UNNo variant codes in an IFTMBF message is optional, it can be useful for helping the receiving system identify the correct variant intended by the sending system.

It is possible that two systems exchanging EDI files may be using different versions of the IMDG Code data. This is a consequence of different implementation times for new data when either a new IMDG Code amendment is released (allowing implementation at any time within the transition year) or an erratum or note verbal is released with no specified implementation time.

By using both the UNNo and the variant code, a receiving system can look for a match with its own substance data. If a match is found, then the substance data (i.e. variant) identified within the receiving system is the same variant used in the sending system to produce the EDI file.

## 6. Matching the CVL with existing DG Databases

The variant description is designed to provide all the information needed to identify the variant.

For a UNNo, this description provides all the information needed to match the CVL records with the same UNNo records in existing DG databases.

This can be shown using a few examples,

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**UN 0004 AMMONIUM PICRATE**

Packing instruction P112(a), (b) or (c) is to be used depending on the substance composition:

P112(a) is applicable to "Solid wetted"  
P112(b) is applicable to "Solid dry, other than powder"  
P112(c) is applicable to "Solid dry powder"

The CVL has three variant codes for UN 0004 and uses the following codes and variation descriptions:

0001 Solid wetted  
0002 Solid dry, other than powder  
0003 Solid dry powder

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**UN 0072 CYCLOTRIMETHYLENETRINITRAMINE (CYCLONITE), (RDX), (HEXOGEN), WETTED**

UN 0072 has four alternative PSNs:

CYCLOTRIMETHYLENETRINITRAMINE, WETTED  
CYCLONITE, WETTED  
RDX, WETTED  
HEXOGEN, WETTED

The CVL has four variant codes for UN 0072 and uses the following codes and variation descriptions:

0100 Cyclonite, wetted  
0200 Cyclotrimethylenetrinitramine, wetted  
0300 Hexogen, wetted  
0400 RDX, wetted

Note that the PSNs are alphabetically sorted before the variant codes are assigned and that the variant codes are not guaranteed to be usable as a user interface display order.

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**UN 0079 HEXANITRODIPHENYLAMINE (DIPICRYLAMINE), (HEXYL)**

UN 0079 has three alternative PSNs and, for each PSN, packing instruction P112(b) or (c) is to be used depending on the substance composition

The CVL has six variant codes for UN 0079 and uses the following codes and variation descriptions:

0102 Dipicrylamine, solid dry, other than powder  
0103 Dipicrylamine, solid dry powder  
0202 Hexanitrodiphenylamine, solid dry, other than powder  
0203 Hexanitrodiphenylamine, solid dry powder  
0302 Hexyl, solid dry, other than powder

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0303 Hexyl, solid dry powder

Note that the final characters of the variant codes are 2 (corresponding to packing instruction P112(b)) and 3 (corresponding to packing instruction P112(c)). This is done to maintain some consistency with UNNos that can have packing instructions (a), (b) or (c) - see UN 0004 above.

### UN 1950 AEROSOLS

UN 1950 has a large number of variants based on capacity, sub-risks and whether or not it is carried as waste:

The CVL has twenty seven variant codes for UN 1950 and uses the following codes and variation descriptions:

0101 Flammable, max. 1L  
0102 Flammable, containing substances of class 6.1, max. 1L  
0103 Flammable, containing substances of classes 6.1 and 8, max. 1L  
0104 Flammable, containing substances of class 8, max. 1L  
0105 Non-flammable, non-toxic, max. 1L  
0106 Non-flammable, containing substances of class 6.1, max. 1L  
0107 Non-flammable, containing substances of classes 6.1 and 8, max. 1L  
0108 Non-flammable, containing substances of class 8, max. 1L  
0109 Oxidizing, max. 1L  
0201 Flammable, above 1L  
0202 Flammable, containing substances of class 6.1, above 1L  
0203 Flammable, containing substances of classes 6.1 and 8, above 1L  
0204 Flammable, containing substances of class 8, above 1L  
0205 Non-flammable, non-toxic, above 1L  
0206 Non-flammable, containing substances of class 6.1, above 1L  
0207 Non-flammable, containing substances of classes 6.1 and 8, above 1L  
0208 Non-flammable, containing substances of class 8, above 1L  
0209 Oxidizing, above 1L  
0301 Waste, flammable  
0302 Waste, flammable, containing substances of class 6.1  
0303 Waste, flammable, containing substances of classes 6.1 and 8  
0304 Waste, flammable, containing substances of class 8  
0305 Waste, non-flammable, non-toxic  
0306 Waste, non-flammable, containing substances of class 6.1  
0307 Waste, non-flammable, containing substances of classes 6.1 and 8  
0308 Waste, non-flammable, containing substances of class 8  
0309 Waste, oxidizing

The variants are grouped as follows:

For variants codes of the form 01xx the PSN is AEROSOLS  
For variants codes of the form 02xx the PSN is AEROSOLS (above 1L)  
For variants codes of the form 03xx the PSN is WASTE AEROSOLS

## 7. DG Databases with a different number of Variants

DG databases may have a different number of variants for a particular UNNo and this can occur for a variety of reasons.

For example:



## IMDG Coded Variant List Technical Description V1.0

1. A database may not store all the information available in the IMDG Code DGL, e.g. packing information - in this case UN 0004 may not have variants.
2. A company may not carry all variants offered in the IMDG Code, e.g. a company may not carry UN 1950 AEROSOLS (above 1L).
3. A company database may be multi-modal and have additional or different variants for different regulations, e.g. ADR.

Matching the IMDG Code CVL with the variety of databases described above (and more) is outside the scope of this document and given the wide variety of possible databases, it would be difficult to accomplish with a generic approach.

Exis Technologies have extensive experience of managing and providing IMDG Code data and can provide a support service to help with the above.

Contact details for Exis Technologies are as follows:

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