

- Table: hazmat\_table
  - This table corresponds to *unique* fields within § 172.101 Hazardous Materials Table
  - The column names correspond as follows

Database columns	Hazmat Table Column (column ID)
hazmat_name	Hazardous materials descriptions and proper shipping names (2)
class_division	Hazard class or Division (3)
unna_code	Identification Numbers (4)
pg	PG (5)
passenger_max_quant	Quantity limitations, passenger-carrying aircraft (9A)
cargo_max_quant	Quantity limitations, cargo aircraft (9B)
stowage_location	Authorized stowage locations on board cargo and passenger vessels (10A)

- The column *row\_id* acts as a unique identifier for each row of the hazmat table and is the primary key for linkage to columns of the hazmat table which are non-unique
- Table: packaging\_instructions
  - Non-bulk packaging (Column 8A) of § 172.101 Hazardous Materials Table
  - Bulk packaging (Column 8B) of § 172.101 Hazardous Materials Table
  - The field *bulk* has values 1 and 0 with 1 being the instruction from column 8B and 0 being the instruction from column 8A
- Table: symbols
  - Symbols (Column 1) of § 172.101 Hazardous Materials Table
- Table: label\_codes
  - Labels (Column 6) of § 172.101 Hazardous Materials Table
- Table: stowage\_codes
  - Codes for stowage and handling requirements (Column 10B) of § 172.101 Hazardous Materials Table
- Table: special\_provisions
  - Special provisions (Column 7) of § 172.101 Hazardous Materials Table
- Table: packaging\_requirements
  - This table is the result of packaging codes scraped from the packaging requirements within §173. The columns are defined as follows:
    - section: The section within §173
    - authorizing\_agency: Where a tank car or specification packaging code is found, this is the nearest preceding value found of the following acronyms: ['AAR', 'DOT', 'IM', 'MC', 'TC']
    - packaging\_code: The packaging code found
    - pattern\_match: Two regular expression (regex) patterns are used to parse each requirement. The first roughly corresponds to specification packaging and the second roughly corresponds to performance packaging. The values of this field are either 'spec' or 'perf', and indicates which pattern the code matched.
    - paragraph: The exact paragraph where the packaging\_code is found. For example e.6.ii indicates that the code is found in sub paragraph ii, within

subparagraph 6, within paragraph e. For paragraphs that do not have a prefix, we use upper case roman numerals (i.e. I, II, III).

- span\_0: The first character index in the paragraph where the packaging code is found
- span\_1: The last character index in the paragraph where the packaging code is found
- Table: packaging\_standards
  - This table is based on parsing of §178.503-940, which largely consists of performance packaging codes, though specification packaging patterns are checked for as well
  - Columns are defined the same as packaging\_requirements
- Table: spec\_packaging
  - This table is based on the parsing of table of contents for §178 to identify where standards are explained for specification packaging. It also attempts to parse the description of that code. For example, §178.38 has the title 'Specification 3B seamless steel cylinders.' Its corresponding record in this table is section='178.38', code='3B', and description='seamless steel cylinders'.
  - Columns are defined as follows:
    - section: the section of §178
    - code: the specification packaging code
    - description: the description of the packaging code
- Table: tank\_cars
  - This table is based on parsing of table of contents for §178 to match tank cars with their corresponding subpart
- Table: explosives
  - This table corresponds to the 'Explosives Table' within §173.62
- Table: pis
  - This table partially represents the 'Table of Packing Methods' within §173.62
  - Columns are defined as follows:
    - pi: the packaging instruction
    - inner: packaging listed in the 'Inner Packagings' column, on the row with a pi value
    - intermediate: packaging listed in the 'Intermediate Packagings' column, on the row with a pi value
    - outer: packaging listed in the 'Outer Packagings' column, on the row with a pi value
- Table: explosive\_pi\_unnas
  - This table partially represents the 'Table of Packing Methods' within §173.62
  - Columns are defined as follows:
    - pi: the packaging\_instruction
    - column: The column where the UNNA code is found. This is either requirements\_exceptions (the first column), inner\_packagings (the 2<sup>nd</sup> column), intermediate\_packagings (the 3<sup>rd</sup> column), or outer\_packagings (the 3<sup>rd</sup> column).
    - unna\_code: this represents UNNA codes that were found by parsing the cell within the corresponding column and the row that comes directly after the PI

- Table: explosive\_pi\_packaging\_codes
  - This table partially represents the 'Table of Packing Methods' within §173.62
  - Columns are defined as follows:
    - pi: the packaging\_instruction
    - column: The column where the UNNA code is found. This is either requirements\_exceptions (the first column), inner\_packagings (the 2<sup>nd</sup> column), intermediate\_packagings (the 3<sup>rd</sup> column), or outer\_packagings (the 3<sup>rd</sup> column).
    - packaging\_code: this represents performance packaging codes that were found by parsing the cell within the corresponding column and the row that comes directly after the PI