### TABLE OF CONTENTS VOLUME I

			Page
		ement concerning the international carriage	
	of dangerous go	ods by road	xiii
	Protocol of sign	ature	xix
Annex A	General provisi and articles	ons and provisions concerning dangerous substances	1
Part 1	General provisi	ons	3
	Chapter 1.1	Scope and applicability	5
	1.1.1	Structure	5
	1.1.2	Scope	5
	1.1.3	Exemptions	6
	1.1.4	Applicability of other regulations	11
	Chapter 1.2	Definitions and units of measurement	15
	1.2.1	Definitions	15
	1.2.2	Units of measurement	33
	Chapter 1.3	Training of persons involved in the carriage of dangerous goods	35
		of dangerous goods	33
	1.3.1	Scope and applicability	35
	1.3.2	Nature of the training	35
	1.3.3	Documentation	36
	Chapter 1.4	Safety obligations of the participants	37
	1.4.1	General safety measures	37
	1.4.2	Obligations of the main participants	37
	1.4.3	Obligations of the other participants	39
	Chapter 1.5	Derogations	43
	1.5.1	Temporary derogations	43
	1.5.2	(Reserved)	43
	Chapter 1.6	Transitional measures	45
	1.6.1	General	45
	1.6.2	Receptacles for Class 2	46
	1.6.3	Fixed tanks (tank-vehicles), demountable tanks and	
		battery-vehicles	46
	1.6.4	Tank-containers, portable tanks and MEGCs	49
	1.6.5	Vehicles	51
	166	Class 7	52

			Page
	Chapter 1.7	General requirements concerning Class 7	55
	1.7.1	General	55
	1.7.2	Radiation protection programme	55
	1.7.3	· · · · · · · · · · · · · · · · · · ·	56
		Quality assurance	
	1.7.4	Special arrangement	56
	1.7.5	Radioactive material possessing other	
		dangerous properties	57
	1.7.6	Non-compliance	57
	Chapter 1.8	Checks and other support measures to ensure	
		compliance with safety requirements	59
	1.8.1	Administrative controls of dangerous goods	59
	1.8.2	Mutual administrative support	59
	1.8.3	Safety adviser	60
	1.8.4	List of competent authorities and bodies	00
	1.0.4	designated by them	66
	1.8.5		66
	1.6.3	Notifications of occurrences involving dangerous goods	00
	Chapter 1.9	Transport restrictions by the competent authorities	73
	1.9.5	Tunnel restrictions	73
	Chapter 1.10	Security provisions	77
	1.10.1	General provisions	77
	1.10.2	Security training	77
	1.10.3	Provisions for high consequence dangerous goods	77
Part 2	Classification		81
	Chapter 2.1	General provisions	83
	2.1.1	Introduction	83
	2.1.2	Principles of classification	84
	2.1.3	Classification of substances, including solutions and mixtures	04
	2.1.3		0.5
	2.1.4	(such as preparations and wastes), not mentioned by name	85 90
	Chanton 2.2		01
	Chapter 2.2	Class specific provisions	91
	2.2.1	Class 1 Explosive substances and articles	91
	2.2.2	Class 2 Gases	119
	2.2.3	Class 3 Flammable liquids	128
	2.2.41	Class 4.1 Flammable solids, self-reactive substances	
		and solid desensitized explosives	133
	2.2.42	Class 4.2 Substances liable to spontaneous combustion	144
	2.2.43	Class 4.3 Substances which, in contact with water,	
	2.2.43	emit flammable gases	148
	2.2.51	Class 5.1 Oxidizing substances	151
	2.2.52	Class 5.2 Organic peroxides	156
	2.2.32	Class 3.4 Organic peroxides	130

				Page
	2	.2.61	Class 6.1 Toxic substances	170
	2	.2.62	Class 6.2 Infectious substances	183
	2	.2.7	Class 7 Radioactive material	190
	2	.2.8	Class 8 Corrosive substances	224
	2	.2.9	Class 9 Miscellaneous dangerous substances and articles	229
	Chapter 2	.3	Test methods	235
	2	.3.0	General	235
	2	.3.1	Exudation test for blasting explosives of Type A	235
	2	.3.2	Tests relating to nitrated cellulose mixtures of Class 4.1	237
	2	.3.3	Tests relating to flammable liquids of Classes 3, 6.1 and 8	238
	2	.3.4	Test for determining fluidity	240
	2	.3.5	Test for determining the ecotoxicity, persistence and	
			bioaccumulation of substances in the aquatic environment	
			for assignment to Class 9	242
	2	.3.6	Classification of organometallic substances in Classes 4.2 and 4.3	245
Part 3			s list, special provisions and exemptions related to packed in limited quantities	247
	dangerous	goods		247
	Chapter 3	.1	General	249
	3	.1.1	Introduction	249
	3	.1.2	Proper shipping name	249
	Chapter 3	.2	Dangerous goods list	253
	3	.2.1	Table A: Dangerous Goods List	253
	3	.2.2	Table B: Alphabetic index of substances and articles of ADR	538

### TABLE OF CONTENTS VOLUME II

Annex A (cont'd)	General provision and articles	ons and provisions concerning dangerous substances	1	
Part 3 (cont'd)	Dangerous goods list, special provisions and exemptions related to dangerous goods packed in limited quantities			
	Chapter 3.3	Special provisions applicable to certain articles or substances	5	
	Chapter 3.4	Exemptions related to dangerous goods packed in limited quantities	33	
	3.4.1 3.4.6	General requirements	33 35	
Part 4	Packing and tan	k provisions	37	
	Chapter 4.1	Use of packagings, including intermediate bulk containers (IBCs) and large packagings	39	
	4.1.1	General provisions for the packing of dangerous goods in packagings, including IBCs and large packagings	39	
	4.1.2	Additional general provisions for the use of IBCs	68	
	4.1.3	General provisions concerning packing instructions	68	
	4.1.4	List of packing instructions	72	
	4.1.5	Special packing provisions for goods of Class 1	162	
	4.1.6	Special packing provisions for goods of Class 2 and goods of other classes assigned to packing instruction P200	163	
	4.1.7	Special packing provisions for organic peroxides (Class 5.2) and self-reactive substances of Class 4.1	166	
	4.1.8	Special packing provisions for infectious substances (Class 6.2)	168	
	4.1.9	Special packing provisions for Class 7	169	
	4.1.10	Special provisions for mixed packing	170	
	Chapter 4.2	Use of portable tanks and UN multiple-element gas containers (MEGCs)	177	
	4.2.1	General provisions for the use of portable tanks for		
	422	the carriage of substances of Class 1 and Classes 3 to 9	177	
	4.2.2	General provisions for the use of portable tanks for	192	
	4.2.3	the carriage of non-refrigerated liquefied gases	182	
	4.2.3	General provisions for the use of portable tanks for	192	
	121	the carriage of refrigerated liquefied gases	183	
	4.2.4	General provisions for the use of UN multiple-element gas containers (MEGCs)	185	
	4.2.5	Portable tank instructions and special provisions	186	
	4.2.3	i ortable talk ilistractions and special provisions	100	

			Page
	Chapter 4.3	Use of fixed tanks (tank-vehicles), demountable tanks, tank-containers and tank swap bodies with shells made of metallic materials, and battery-vehicles and multiple-element gas containers (MEGCs)	201
	4.3.1	Scope	201
	4.3.2	Provisions applicable to all classes	201
	4.3.3	Special provisions applicable to Class 2	205
	4.3.4 4.3.5	Special provisions applicable to Classes 3 to 9  Special provisions	214 221
	Chapter 4.4	Use of fibre-reinforced plastics (FRP) tanks, fixed-tanks (tank-vehicles), demountable tanks, tank containers and tank swap bodies	225
	4.4.1	General	225
	4.4.2	Operation	225
	Chapter 4.5	Use of vacuum operated waste tanks	227
	4.5.1	Use	227
	4.5.2	Operation	227
	7.3.2	Operation	221
Part 5	Consignment procedures		
	Chapter 5.1	General provisions	231
	5.1.1	(Reserved)	231
	5.1.2	Use of overpacks	231
	5.1.3	Empty uncleaned packagings (including IBCs and large packagings),	
		tanks, vehicles and containers for carriage in bulk	232
	5.1.4	Mixed packing	232
	5.1.5	General provisions for Class 7	232
	Chapter 5.2	Marking and labelling	239
	5.2.1	Marking of packages	239
	5.2.2	Labelling of packages	242
	Chapter 5.3	Placarding and marking of containers, MEGCs, tank-containers, portable tanks and vehicles	249
	5.3.1	Placarding	249
	5.3.2	Orange-coloured plate marking	252
	5.3.3	Mark for elevated temperature substances	257
	Chapter 5.4	Documentation	259
	5.4.1	Dangerous goods transport document and related information	259
	5.4.2	Container packing certificate	267
	5.4.3	Instructions in writing	268
	5.4.4	Example of a multimodal dangerous goods form	270

	Chapter 5.5	Special provisions
	5.5.1	(Deleted)
	5.5.2	Special provisions for fumigated vehicles, containers and tanks
art 6	_	For the construction and testing of packagings, intermediate (IBCs), large packagings, tanks and bulk containers
	Chapter 6.1	Requirements for the construction and testing of
	Chapter 0.1	packagings
	6.1.1	General
	6.1.2	Code for designating types of packagings
	6.1.3	Marking
	6.1.4	Requirements for packagings
	6.1.5	Test requirements for packagings
	6.1.6	Standard liquids for verifying the chemical compatibility
		testing of polyethylene packagings, including IBCs,
		in accordance with 6.1.5.2.6 and 6.5.6.3.5, respectively
	Chapter 6.2	Requirements for the construction and testing of pressure
		receptacles, aerosol dispensers and
		small receptacles containing gas (gas cartridges)
	6.2.1	General requirements
	6.2.2	Pressure receptacles designed, constructed and tested according
		to standards
	6.2.3	Requirements for pressure receptacles not designed, constructed
		and tested according to standards
	6.2.4	General requirements for aerosol dispensers and small
		receptacles containing gas (gas cartridges)
	6.2.5	Requirements for UN pressure receptacles
	Chapter 6.3	Requirements for the construction and testing of
		packagings for Class 6.2 substances
	6.3.1	General
	6.3.2	Test requirements for packagings
	6.3.3	Test report
	Chapter 6.4	Requirements for the construction, testing and
		approval of packages and material of Class 7
	6.4.1	(Reserved)
	6.4.2	General requirements
	6.4.3	(Reserved)
	6.4.4	Requirements for excepted packages
	6.4.5	Requirements for Industrial packages
	6.4.6	Requirements for packages containing uranium hexafluoride
	6.4.7	Requirements for Type A packages
	6.4.8	Requirements for Type B(U) packages
	6.4.9	Requirements for Type B(M) packages
	6.4.10	Requirements for Type C packages

			Page
	6.4.11	Requirements for packages containing fissile material	358
	6.4.12	Test procedures and demonstration of compliance	362
	6.4.13	Testing the integrity of the containment system and shielding	
		and evaluating criticality safety	363
	6.4.14	Target for drop tests	363
	6.4.15	Tests for demonstrating ability to withstand normal	262
	6.4.16	conditions of carriage	363
	0.4.10	Additional tests for Type A packages designed for liquids and gases	364
	6.4.17	Tests for demonstrating ability to withstand accident	304
	0.1.17	conditions in carriage	365
	6.4.18	Enhanced water immersion test for Type B(U) and	305
	0	Type B(M) packages containing more than $10^5 A_2$	
		and Type C packages	366
	6.4.19	Water leakage test for packages containing fissile material	366
	6.4.20	Tests for Type C packages	366
	6.4.21	Inspections for packagings designed to contain 0.1 kg or more	
		of uranium hexafluoride	367
	6.4.22	Approvals of package designs and materials	368
	6.4.23	Applications and approvals for radioactive material carriage	369
Chapter	6.5	Requirements for the construction and testing	
Chapter	0.0	of intermediate bulk containers (IBCs)	379
	6.5.1	General requirements	379
	6.5.2	Marking	381
	6.5.3	Construction requirements	384
	6.5.4	Testing, certification and inspection	384
	6.5.5	Specific requirements for IBCs	386
	6.5.6	Test requirements for IBCs	394
Chapter	6.6	Requirements for the construction and testing of	
		large packagings	405
	6.6.1	General	405
	6.6.2	Code for designating types of large packagings	405
	6.6.3	Marking	406
	6.6.4	Specific requirements for large packagings	407
	6.6.5	Test requirements for large packagings	410
Chapter	67	Requirements for the design, construction, inspection	
Chapter	0.7	and testing of portable tanks and	
		UN multiple-element gas containers (MEGCs)	415
	6.7.1	Application and general requirements	115
	6.7.2	Application and general requirements	415
	0.7.2	and testing of portable tanks intended for the carriage	
		of substances of Class 1 and Classes 3 to 9	415
	6.7.3	Requirements for the design, construction, inspection	413
	0.7.3	and testing of portable tanks intended for the carriage	
		of non-refrigerated liquefied gases	433
		1	

			Page
	6.7.4	Requirements for the design, construction, inspection	
		and testing of portable tanks intended for the carriage	
		of refrigerated liquefied gases	447
	6.7.5	Requirements for the design, construction, inspection and	
		testing of UN multiple-element gas containers (MEGCs)	
		intended for the carriage of non-refrigerated gases	459
Chapter	6.8	Requirements for the construction, equipment, type	
Chapter	0.0	approval, inspections and tests, and marking of fixed	
		tanks (tank-vehicles), demountable tanks and	
		tank-containers and tank swap bodies, with shells made	
		of metallic materials, and battery-vehicles and	
		multiple element gas containers (MEGCs)	467
	6.8.1	Scope	467
	6.8.2	Requirements applicable to all classes	467
	6.8.3	Special requirements applicable to Class 2	485
	6.8.4	Special provisions	496
	6.8.5	Requirements concerning the materials and construction of	170
	0.0.5	fixed welded tanks, demountable welded tanks, and welded	
		shells of tank-containers for which a test pressure of not less	
		than 1 MPa (10 bar) is required, and of fixed welded tanks,	
		demountable welded tanks and welded shells of	
		tank-containers intended for the carriage of refrigerated	
		liquefied gases of Class 2	502
Chapter	6.9	Requirements for the design, construction, equipment, type approval, testing and marking of fibre-reinforced plastics (FRP) fixed tanks (tank-vehicles), demountable tanks, tank-containers and tank swap bodies	507
	6.9.1	General	507
	6.9.2	Construction	507
	6.9.3	Items of equipment	512
	6.9.4	Type testing and approval	512
	6.9.5	Inspections	514
	6.9.6	Marking	514
Chapter	6.10	Requirements for the construction, equipment, type approval, inspection and marking of vacuum-operated waste tanks	515
	C 10 1	Company	E 1 5
	6.10.1 6.10.2	General  Construction	515 515
	6.10.2	Items of equipment	516
	6.10.4	Inspection	518
CI .	C 11		
Chapter	6.11	Requirements for the design, construction, inspection and testing of bulk containers	519
			21)
	6.11.1	Definitions	519
	6.11.2	Application and general requirements	519

				Page
		6.11.3	Requirements for the design, construction, inspection and testing of containers conforming to the CSC used	<b>510</b>
		6.11.4	Requirements for the design, construction and approval of	519
			bulk containers other than containers conforming to the CSC	521
Part 7	Provisio and han		erning the conditions of carriage, loading, unloading	523
	Chapter	7.1	General provisions	525
	Chapter	7.2	Provisions concerning carriage in packages	527
	Chapter	7.3	Provisions concerning carriage in bulk	531
		7.3.1	General provisions	531
		7.3.2	Additional provisions for the carriage in bulk when the provisions of 7.3.1.1 (a) are applied	533
		7.3.3	Special provisions for the carriage in bulk when the provisions of 7.3.1.1 (b) are applied	534
	Chapter	7.4	Provisions concerning carriage in tanks	537
	Chapter	7.5	Provisions concerning loading, unloading	
	•		and handling	539
		7.5.1	General provisions concerning loading, unloading	
			and handling	539
		7.5.2	Mixed loading prohibition	539
		7.5.3	(Reserved)	542
		7.5.4	Precautions with respect to foodstuffs, other articles of consumption and animal feeds	542
		7.5.5	Limitation of the quantities carried	542
		7.5.6	(Reserved)	543
		7.5.7	Handling and stowage	543
		7.5.8	Cleaning after unloading	544
		7.5.9	Prohibition of smoking	544
		7.5.10	Precautions against electrostatic charges	544
		7.5.11	Additional provisions applicable to certain classes or	
			specific goods	545

			Page
Annex B		erning transport equipment and tions	55.
Part 8			
rario	documentation	or vehicle crews, equipment, operation and	555
	Chapter 8.1	General requirements concerning transport units	
	Chapter 0.1	and equipment on board	557
	8.1.1	Transport units	
	8.1.2	Documents to be carried on the transport unit	
	8.1.3	Placarding and marking	
	8.1.4	Fire-fighting equipment	
	8.1.5	Miscellaneous equipment	559
	Chapter 8.2	Requirements concerning the training	
		of the vehicle crew	561
	8.2.1	General requirements concerning the training of drivers	561
	8.2.2	Special requirements concerning the training of drivers	
	8.2.3	Training of persons, other than the drivers holding a	
	5	certificate in accordance with 8.2.1, involved in the	
		carriage of dangerous goods by road	567
	Chapter 8.3	Miscellaneous requirements to be complied with by the vehicle crew	569
	8.3.1	Passengers	569
	8.3.2	Use of fire-fighting appliances	569
	8.3.3	Prohibition on opening packages	569
	8.3.4	Portable lighting apparatus	569
	8.3.5	Prohibition on smoking	569
	8.3.6	Running the engine during loading or unloading	
	8.3.7	Use of the parking brake	569
	Chapter 8.4	Requirements concerning the supervision of vehicles	571
	Chapter 8.5	Additional requirements relating to particular classes or substances	573
	Chapter 8.6	Road tunnel restrictions for the passage of vehicles carrying dangerous goods	579
	8.6.1	General provisions	579
	8.6.2	Road signs or signals governing the passage of vehicles carrying	
		dangerous goods	579
	8.6.3	Tunnel restriction codes	
	8.6.4	Restrictions for the passage of transport units carrying dangerous	
		goods through tunnels	579

			Page
Part 9	Requirements of	concerning the construction and approval of vehicles	581
	Chapter 9.1	Scope, definitions and requirements for the approval of vehicles	583
	9.1.1	Scope and definitions	
	9.1.2	Approval of EX/II, EX/III, FL, OX and AT vehicles	584
	9.1.3	Certificate of approval.	585
	Chapter 9.2	Requirements concerning the construction of vehicles	589
	0.2.2	Electrical continuent	502
	9.2.2	Electrical equipment	593
	9.2.3	Braking equipment	596
	9.2.4	Prevention of fire risks	596
	9.2.5 9.2.6	Speed limitation device	598 598
	7.2.0	Coupling devices of duniers	370
	Chapter 9.3	Additional requirements concerning complete or	
		completed EX/II or EX/III vehicles intended for the carriage of	
		explosive substances and articles (Class 1) in packages	599
	9.3.1	Materials to be used in the construction of vehicle bodies	599
	9.3.2	Combustion heaters	599
	9.3.3	EX/II vehicles	599
	9.3.4	EX/III vehicles	599
	9.3.5	Engine and load compartment	600
	9.3.6	External heat sources and load compartment	600
	9.3.7	Electrical equipment	600
	Chapter 9.4	Additional requirements concerning the construction of the bodies of complete or completed vehicles intended for the carriage of dangerous goods in packages (other than EX/II and EX/III vehicles)	601
	Chapter 9.5	Additional requirements concerning the construction	
	Chapter 7.5	of the bodies of complete or completed vehicles intended for the carriage of dangerous solids in bulk	603
	Chapter 9.6	Additional requirements concerning complete or completed vehicles intended for the carriage of	605
		temperature controlled substances	605
	Chapter 9.7	Additional requirements concerning fixed tanks	
		(tank-vehicles), battery-vehicles and complete or completed	
		vehicles used for the carriage of dangerous goods in	
		demountable tanks with a capacity greater than 1 m <sup>3</sup> or	
		in tank-containers, portable tanks or MEGCs of a capacity	
		greater than 3 m <sup>3</sup> (FX/III, FL, OX and AT vehicles)	607
	9.7.1	General provisions	607
	9.7.2	Requirements concerning tanks	607
	9.7.3	Fastenings	607
	7.1.5	- wave-111150	007

		Page
9.7.4	Earthing of FL vehicles	607
9.7.5	Stability of tank-vehicles	608
9.7.6	Rear protection of vehicles	608
9.7.7		608
9.7.8	Electrical equipment	609