

Incorporating Amendment No. 1



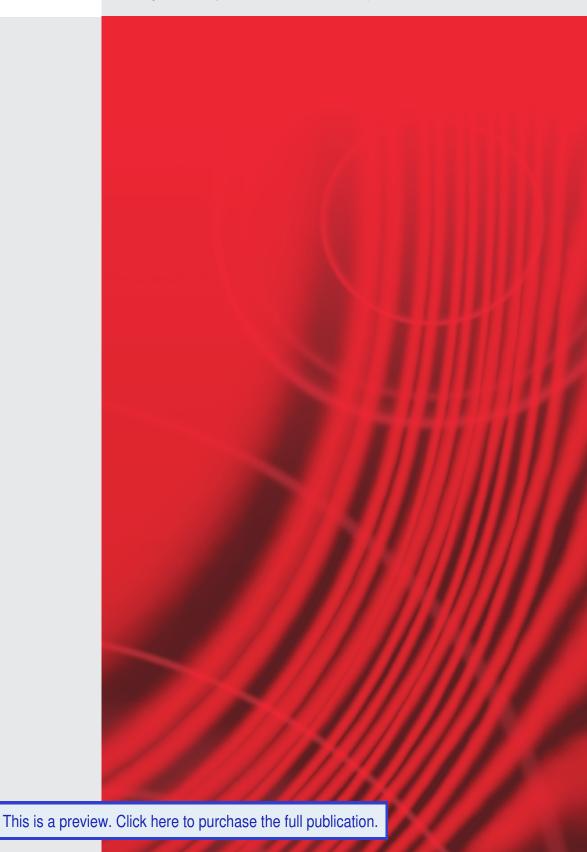
New Zealand Standard

Transport of dangerous goods on land

Part 1: Technical information

Superseding NZS 5433:Part 1:2007

NZS 5433:Part 1:2012



COMMITTEE REPRESENTATION

This Standard was prepared under the supervision of the P 5433 Committee the Standards Council established under the Standards Act 1988.

The committee consisted of representatives of the following:

Nominating organisation

Civil Aviation Authority

Custom Brokers and Freight Forwarders' Federation of New Zealand Inc.

Department of Labour

Environmental Protection Authority (formerly ERMA New Zealand¹)

Environmental Protection Authority (formerly ERMA New Zealand)

HazKnow Ltd KiwiRail

Liquified Petroleum Gas Association of New Zealand

Maritime New Zealand Ministry of Health

New Zealand Fire Service

New Zealand Police

New Zealand Transport Agency Responsible Care New Zealand Inc. Road Transport Forum New Zealand

Tranzqual ITO

Committee member

Max Evans
Sean Nearey
Kim Comben
George Hewitt
Peter Dawson
Peter Roche
Gary Hutchins
Bob Kooge

Alexander Munro (until mid-2011)

Naty Foronda

Dick Thornton-Grimes

Lance King Richard Bean Bill Birch Mark Ngatuere

John Curran (until mid-2011)

ACKNOWLEDGEMENT

Standards New Zealand gratefully acknowledges the contribution of time and expertise from all those involved in developing this Standard.

We acknowledge use of material from the following publications:

- (a) UN Recommendations on the Transport of Dangerous Goods (UNRTDG) Model Regulations Sixteenth revised edition. 2009
- (b) UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria (UNRTDG MTC) Fifth revised edition (ST/SG/AC.10/11/Rev.5). 2010
- (c) International Maritime Dangerous Goods Code. 2010
- (d) Australian Dangerous Goods Code Seventh edition. 2007
- (e) KiwiRail Operating Code Supplement CS3.3 Conveyance of Dangerous Goods. 2011

Thanks also to the management and staff at Mainfreight ChemCouriers, Wellington and Chempro Logistics, Wellington for their participation in cover photography. Photographer: Nick Servian.

COPYRIGHT

The copyright of this document is the property of the Standards Council. No part of this document may be reproduced by photocopying or by any other means without the prior written permission of the Chief Executive of Standards New Zealand, unless the circumstances are covered by Part 3 of the Copyright Act 1994.

Standards New Zealand will vigorously defend the copyright in this Standard. Every person who breaches Standards New Zealand's copyright may be liable, under section 131(5) (a) of the Copyright Act 1994, to a fine not exceeding \$10,000 for every infringing copy to which the offence relates, but not exceeding \$150,000 for the same transaction, or to imprisonment for a term not exceeding 5 years. Those in breach under section 131(5) (b) of the Copyright Act 1994 may be liable to a fine not exceeding \$150,000 or to imprisonment for a term not exceeding 5 years. If there has been a flagrant breach of copyright, Standards New Zealand may also seek additional damages from the infringing party, in addition to obtaining injunctive relief and an account of profits.

Published by Standards New Zealand, the trading arm of the Standards Council, Private Bag 2439, Wellington 6140. Telephone: (04) 498 5990; Fax: (04) 498 5994; Website: www.standards.co.nz.

¹ The functions of ERMA New Zealand transferred to the Environmental Protection Authority on 1 July 2011.

NZS 5433:Part 1:2012

Incorporating Amendment No. 1

New Zealand Standard

Transport of dangerous goods on land

Part 1: Technical information

Superseding NZS 5433:Part 1:2007

NOTES

AMENDMENTS			
No.	Date of issue	Description	Entered by, and date
1	October 2012	8.7 – amended to remove reference to Maritime Rules; previous wording of 8.7 and 8.8 in NZS 5433:2007 was reinstated in 8.7.	Incorporated in this edition.

COPYRIGHT © Standards New Zealand

This is a preview. Click here to purchase the full publication.

CONTENTS

Committee representationIFG		
AcknowledgementIFC		
Соруг	right	IFC
Refere	enced (documents viii
Relate	ed doci	umentsxi
Lates	t revisio	onsxii
Revie	w of St	andardsxii
Forew	ord	xiii
		utementxvi
Note	to read	ersxvi
Section	on	
1	SCOP	E1–1
•	1.1	Policy
	1.2	Application1–2
	1.3	Terms, definitions, and abbreviations1–4
	1.4	Summary of the requirements of the Dangerous Goods Rule1-6
2	CLASSIFICATION OF DANGEROUS GOODS2-	
	2.0	Introduction2–1
	2.1	Class 1 – Explosives
	2.2	Class 2 – Gases2–20
	2.3	Class 3 – Flammable liquids and desensitised explosives2–22 $$
	2.4	Class 4 - Flammable solids; substances liable to spontaneous
		combustion; substances which, in contact with water, emit
		flammable gases
	2.5	Class 5 – Oxidizing substances and organic peroxides2–44
	2.6	Class 6 – Toxic and infectious substances
	2.7	Class 7 – Radioactive material
	2.8	Class 8 – Corrosive substances
	2.9	Class 9 – Miscellaneous dangerous substances and articles including environmentally hazardous substances2–90
0	DAOK	
3		AGING 3–1
	3.0	Definitions specific to packaging
	3.1	General requirements
	3.2	Code for designating types of packages
	3.3	Packaging performace and specification markings
	3.4	Markings for intermediate bulk containers
	3.5	Markings for large packagings
	3.6	Packagings for dangerous goods in excepted quantities3–19

4	USE OF PACKAGINGS, INCLUDING INTERMEDIATE BULK CONTAINERS AND LARGE PACKAGINGS		
	4.0	Introduction	
	4.1	References to Part 6 of the UNRTDG	
	4.2	Use of portable tanks and multiple-element gas containers	4–92
	4.3	Use of bulk containers for solid dangerous goods	
	4.4	Use of bulk containers	4–93
5	MAF	RKING AND LABELLING	5–1
	5.1	Introduction	5–1
	5.2	Overpack markings	5–1
	5.3	Special marks	5–1
	5.4	Labelling	5–2
	5.5	Positioning of class labels	
	5.6	Empty containers	5–6
	5.7	Salvage packagings	5–8
6	DOC	CUMENTATION	6–1
	6.1	General	6–1
	6.2	Dangerous goods declaration	6–1
	6.3	Container packing certificate	6-3
	6.4	Emergency response telephone number	6-4
	6.5	Tracked substances	6-5
	6.6	Schedule of quantity information	6-6
7	CHE	CKING DANGEROUS GOODS BEFORE TRANSPORT	7–1
	7.1	Acceptance checks	7–1
	7.2	Key elements	7–1
	7.3	Packaging	7–3
	7.4	Labelling	7–4
8	SEG	REGATION	8–1
	8.1	Application	8–1
	8.2	Separation distance	8–3
	8.3	Foodstuffs	8–3
	8.4	Fire risk substances	8–3
	8.5	Segregation groups	8–4
	8.6	Segregation devices	8–21
	8.7	Transport of dangerous goods by sea	8–22
	8.8	Class restrictions for transport by sea	8–22
	8.9	Segregation device use for maritime transport	8–22
9	PLA	CARDING	9–1
	9.1	General	9–1
	9.2	Design	9–1
	9.3	Emergency information panel	9_1

TRANSPORT PROCEDURES10-1		
10.1	Special provisions applicable to the transport of self-reactive substances of Division 4.1 and organic peroxides of	
	Division 5.2	
10.2	Special provisions applicable to the transport of substances	
	stabilised by temperature control (other than self-reactive	
	substances and organic peroxides)10-4	
EME	RGENCY MANAGEMENT11-1	
11.1	Elements to consider in an emergency	
11.2	Fire extinguishers	
11.3	Quickguide11–3	
11.4	Emergency procedures	
TRAINING		
12.1	General awareness/familiarisation training	
12.2	Function-specific training	
AUDI	TING13–1	
13.1	Introduction	
13.2	Responsibility	
ndix		
Hazchem emergency action code key (Informative)A-1		
(Reserved) B-1		
Dangerous goods labels and placards (Normative) C-1		
Dangerous goods declaration (Informative)		
Specification for segregation devices (Normative)E-1		
Infectious substances (Informative)		
	10.1 10.2 EMEF 11.1 11.2 11.3 11.4 TRAII 12.1 12.2 AUDI 13.1 13.2 Indix Hazcl (Rese Dang Dang Speci	

Table

1	List of topics covered by the Dangerous Goods Rule and referenced in Standard	
2	Dangerous goods transported for your own domestic or recreational use	1–7
3	Dangerous goods transported as tools of your trade, for agricultural use or for a commercial purpose, but not for hire or direct reward	1–8
4	Dangerous goods transported by a commercial transport operator for hire or reward	1–9
5	Classes of dangerous goods	2–2
6	HSNO/Dangerous goods pictogram and classification comparisons	2–3
7	Precedence of hazards and packing groups for Classes 3, 4 and 8 and for Divisions 5.1 and 6.1	2–14
8	Compatibility group and classification codes	2–18
9	Combination of division and compatibility group	2–19
10	Packing group of flammable liquids	2–24
11	Self-reactive substances	2–31
12	List of currently assigned organic peroxides	2–50
13	Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists	2–75
14	Indicative examples of infectious substances included in Category A in any form unless otherwise indicated	2–82
15	Categories for substances hazardous to the aquatic environment	2–97
16	Classification scheme for substances hazardous to the aquatic environment	2–100
17	Classification of a mixture for acute hazards, based on summation of the concentrations of classified ingredients	2–106
18	Classification of a mixture for long-term hazards, based on summation of the concentrations of classified ingredients	2–107
19	Multiplying factors for highly toxic ingredients of mixtures	2–107
20	Comparison of HSNO and UNRTDG aquatic toxicity criteria	2–108
21	Packagings and type designators	3–7
22	Examples of markings for new packagings	3–11
23	Examples of reprocessing markings	3–11
24	Example of a salvage marking	3–12
25	Codes for IBCs	3–13
26	Codes for categories of IBC	3–14
27	Markings on IBCs	3–16

28	Additional markings on IBCs	3–17
29	Markings on large packagings3-	
30	List of references to Part 6 of the UNRTDG and their descriptions4	
31	Examples of required marked test pressures for packagings, including IBCs, calculated as in 4.1.1.10(c)	4–7
32	Approved cleaning procedures or circumstances when empty containers are not dangerous goods	5–7
33	Sea segregation requirements	8–22
34	Segregation of packages of dangerous goods for road transport	8–23
35	Derivation of control and emergency temperatures	10–2
C1	Guide to minimum label and text marking sizes	C–1
C2	Colour of labels	C-3
СЗ	Label details	C-8
F1	Liquid or non-liquid infectious effluent and sludges	F-5
Figur	e	
1	Flow chart scheme for self-reactive substances	2–38
2	Flow chart scheme for organometallic substances	2–43
3	Principles for classification of organic peroxides	2–68
4	Inhalation toxicity: Packing group borderlines	2–76
5	Categories for substances long-term hazardous to the aquatic environment	2–99
6	Tiered approach to classification of mixtures for acute and long-term aquatic environmental hazards	. 2–101
7	Handling label	5–3
8	Marking and labelling of a combination package (fibreboard box) containing liquid inner packagings	5–4
9	Example of marking and labelling for a single packaging (steel drum)	5-5
10	Clean and empty dangerous goods containers	5–9
11	Packing	7–3
12	Labelling	7–4
13(a)	Example of emergency information panel	9-2
13(b)	Placards and marks for diesel classified as: UN 3082, Environmentally Hazardous Substance, Liquid, N.O.S.	
14	Directory board for use with mixed loads	9–3
15	ASAP quickguide for spill management	11–4
A1	Hazchem emergency action code	A-2

REFERENCED DOCUMENTS

Reference is made in this part of this Standard to the following:

NEW ZEALAND STANDARDS

NZS 4304:2002 Management of healthcare waste
NZS 8409:2004 Management of agrichemicals

AUSTRALIA/NEW ZEALAND STANDARD AND HANDBOOK

AS/NZS 1850:2009 Portable fire extinguishers - Classification, rating and

performance testing

SAA/SNZ HB 76:2010 Dangerous goods - Initial emergency response guide

ISO STANDARDS

ISO 1516:2002	Determination of flash/no flash – Closed cup equilibrium method
ISO 1523:2002	Determination of flash point – Closed cup equilibrium method
ISO 2592:2000	Determination of flash and fire points – Cleveland open cup method
ISO 2719:2002	Determination of flash point – Pensky-Martens closed cup method
ISO 3405:2011	Petroleum products – Determination of distillation characteristics at atmospheric pressure
ISO 3679:2004	Determination of flash point – Rapid equilibrium closed cup method
ISO 3680:2004	Determination of flash/no flash – Rapid equilibrium closed cup method
ISO 3924:2010	Petroleum products – Determination of boiling range distribution – Gas chromatography method
ISO 4626:1980	Volatile organic liquids – Determination of boiling range of organic solvents used as raw materials
ISO 6383-2:1983	Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method
ISO 7765-1:1988	Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods
ISO 10156:2010	Gases and gas mixtures – Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets
ISO 10692-2:2001	Gas cylinders – Gas cylinder valve connections for use in the micro-electronics industry – Part 2: Specification and type testing for valve to cylinder connections

COPYRIGHT © Standards New Zealand