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Supersedes CAN/CGSB-3.5-2011

National Standard of Canada

Automotive gasoline

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In this Standard, "shall" states a mandatory requirement, "should" expresses a recommendation and "may" is used to express an option or that which is permissible within the limits of this Standard. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

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Automotive gasoline

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Automotive gasoline

1 Scope

This standard applies to four grades of gasoline to which no lead or phosphorus compounds have been added. They are intended for use in spark-ignition engines under a wide range of climatic conditions.

This standard is not intended to apply to the mixing of oxygenated gasolines and gasolines, either at the point of retail sale or after the point of retail sale.

Gasoline specified in this standard may contain limited concentrations of aliphatic ethers and alcohols.

Provincial and federal regulations control some parameters included in this standard. Where such regulations establish more restrictive limits than those given in this standard, the regulated limits shall apply.

The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use.

2 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this standard. The referenced documents may be obtained from the sources noted below.

NOTE The addresses provided below were valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 Canadian General Standards Board (CGSB)

CAN/CGSB-3.0 — *Methods of testing petroleum and associated products*:

No. 14.3 — *Standard test method for the identification of hydrocarbon components in automotive gasoline using gas chromatography*

No. 19.5 — *Determination of lead in automotive gasoline (Atomic absorption)*

No. 28.8 — *Visual haze rating of liquid fuel oils*

No. 60.32 — *Standard test method for determination of the corrosiveness to silver of gasoline, middle distillate fuels and oxygenated fuels using silver wool: Rapid ultrasonic method*

CAN/CGSB-3.511 — *Oxygenated automotive gasoline containing ethanol (E1-E10).*

2.1.1 Source

The above may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5740. E-mail ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html.

2.2 Environment Canada (EC)

Benzene in Gasoline Regulations (SOR/97-493)

Sulphur in Gasoline Regulations (SOR/99-236).

2.2.1 Source

The above may be obtained from the Department of Justice Canada, Communications Branch, 284 Wellington Street, Ottawa, Canada K1A 0H8. Website http://laws-lois.justice.gc.ca/eng/index.html. If this Web site becomes inoperative, regulations may also be found at www.canlii.org.

2.3 Transport Canada (TC)

Transportation of Dangerous Goods (TDG) Regulations.

2.3.1. Source

The above may be obtained from the Department of Justice Canada, Communications Branch, 284 Wellington Street, Ottawa, Canada K1A 0H8. Website http://laws-lois.justice.gc.ca/eng/index.html. If this Web site becomes inoperative, regulations may also be found at www.canlii.org.

2.4 ASTM International

Annual Book of ASTM Standards (see Annex A).

2.4.1 Source

The above may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, U.S.A., telephone 610-832-9585, fax 610-832-9555, Web site www.astm.org, or from IHS Global Canada Ltd, 200-1331 MacLeod Trail SE, Calgary, Alberta T2G 0K3, telephone 613-237-4250 or 1-800-267-8220, fax 613-237-4251, Web site www.global.ihs.com.

2.5 NACE International

TM-0172 — *Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines.*

2.5.1 Source

The above may be obtained from NACE International, 1440 South Creek Drive, Houston, TX 77084-4906, U.S.A. telephone 281-228-6200. Web site www.nace.org. E-mail firstservice@nace.org.

2.6 United States Environmental Protection Agency (U.S. EPA)

Certified Gasoline Detergents.

2.6.1 Source

The above may be obtained from the U.S. Environmental Protection Agency, Transportation and Air Quality. Web site at http://www3.epa.gov/otaq/fuels1/ffars/web-detrg.htm.

2.7 See Annex B for acts and regulations that apply to automotive gasoline.

3 Terms and definitions

For the purposes of this National Standard of Canada, the following terms and definitions apply.

3.1
antiknock index
average of the Research (*RON*) and Motor (*MON*) octane number for the fuel, i.e. (*RON* + *MON*)/2.

3.2
benzene emissions number (BEN)
estimate of the evaporative, running and tailpipe benzene emissions from vehicles and is calculated in accordance with Schedule 1 of the *Benzene in Gasoline Regulations* (see Annex B, B.1.6).

3.3
closed loop side stream sampler
sample line connected to a storage tank or pipeline capable of extracting a sample and re-injecting any excess back into the product being sampled.

3.4
driveability index (DI)
parameter based on distillation temperatures. It is designed to ensure good vehicle performance relating to time-to-start, stalls, hesitations, stumbles, surges and backfiring. It is defined as

$DI = 1.5 \times T_{10} + 3.0 \times T_{50} + T_{90}$

where:

T_{10}, T_{50}, T_{90} = temperatures (°C) at 10%, 50%, and 90% evaporated (see 6.17).

DI can be converted to its degrees Fahrenheit equivalent, as follows:

$DI_F = 1.8 \times DI + 176$

where:

DI_F = *DI* based on °F

DI = *DI* based on °C

3.5
gasoline
fuel conforming to the requirements of this standard.

3.6
grade
gasoline as differentiated by the antiknock index, with Grade 1 having the lowest index (see 4.1.1).

3.7
oxygenated gasoline
fuel conforming to the requirements of CAN/CGSB-3.511.

3.8
point of retail sale
location where the end user takes delivery of the product.

3.9
primary supplier
for gasoline that is

a) manufactured in a refinery, the manufacturer;

b) imported, the importer; and

c) blended, the blender.

3.10
primary terminal
distribution facility that

a) is connected directly to a refinery or

b) can be supplied by pipeline from a refinery or

c) receives imported product directly or

d) is located on the Great Lakes and can be supplied by ship.

3.11
proportional sample
sample made by combining samples from different batches in volumetric proportion.

3.12
recirculation loop
piping and a transfer pump configured into a loop and used to mix the product in a storage tank by recirculating the product from one part of the tank to another.

3.13
sample integrity
no significant change in the detailed requirement being tested, i.e., between the sample point and the analytical equipment.

3.14
yearly pool average
volume weighed average of a parameter in the gasoline supplied by a primary supplier during a calendar year.

4 Classification

4.1 The gasoline shall be supplied in the following grades, as specified (see 8.1).

4.1.1 Grades

Grade 1 — Regular

Grade 2 — Mid-grade

Grade 3 — Premium

Grade 4 — Super-Premium.

5 General requirements

5.1 The gasoline shall comply with this standard at the point of retail sale except for the volatility requirements specified in 5.2.

5.2 Volatility requirements

The requirements for vapour pressure, distillation, and driveability index are adjusted by geographic zone of intended use and time of year. The zones are described in Table 2 and shown in Figures 1, 2 and 3. The limiting values for each zone are listed in Tables 3A to 3H.

5.2.1 Vapour pressure, maximum

Maximum vapour pressure limits at or below 72 kPa are solely intended to minimize evaporative losses in fuel distribution and from vehicles and equipment. Vapour pressure limits below 72 kPa in Tables 3A to 3H may be waived by government regulations, but shall not exceed 72 kPa. See Annex B.

5.2.2 Vapour pressure, minimum

Minimum vapour pressure limits are intended to help minimize formation of a flammable mixture in the vapour space of the fuel tanks at low ambient temperatures.

5.3 The volatility requirements specified in 6.16, 6.17 and 6.18 shall be for the period and geographic zone of intended use, detailed in Tables 3A to 3H, with compliance at one of the following:

a) Primary terminal

b) Point of entry into Canada

The volatility schedules detailed in Tables 3A to 3H include a half-month period for turning over inventory at service stations, when necessary. A longer turnover period at times close to seasonal weather changes could result in degraded vehicle performance.

5.4 Automotive gasoline shall be essentially hydrocarbons but may contain aliphatic ethers, alcohols and additives designed and tested to improve the characteristics of the gasoline to enhance performance. Additives include but are not limited to metal deactivators, oxidation inhibitors, corrosion inhibitors, icing inhibitors and fuel system detergents. Additives designed and tested to enhance performance may be added in amounts less than 1.0% by volume, unless otherwise specified in this standard.

5.5 Vehicles require effective fuel system detergency to minimize engine deposits that impair performance and increase exhaust emissions.

5.6 Aldehydes, ketones, amines, acids, acid esters, halogenated compounds, silicon compounds, soluble polymers, used lubricating oils and solvents or other such materials shall not be added except as components of additives defined in 5.4 or as normally occurring trace constituents.

5.7 The gasoline shall be visually clear and free from undissolved water, sediment and suspended matter under the temperature and conditions of custody transfer. Components shall be thoroughly mixed to prevent the sale of compositions that do not meet the standard or are potentially damaging due to stratification in dispensing tankage.

5.8 Materials used in refinery processes, such as caustics and acids, can be carried over in trace quantities into the gasoline and could cause unexpected problems. Moreover, these contaminants cannot always be detected by the standard tests listed in this standard. It is recommended that adequate quality assurance procedures be put in place to ensure that any refinery processing materials are identified and controlled.

6 Detailed requirements

6.1 The gasoline shall comply with the specified limiting values. The specified limiting values shall not be changed. This precludes any allowances for the test method precision and for adding or subtracting digits.

6.1.1 For purposes of determining conformance with the specified limiting values, an observed value or a calculated value shall be rounded off “to the nearest unit” in the last right-hand digit used in expressing the specified limiting value, in accordance with the rounding-off method of ASTM E29. There is one exception (see Table 1, Antiknock Index).

6.1.2 Where test values differ between two parties, a resolution shall be in accordance with ASTM D3244 in order to determine conformance with the specified limiting values, with the criticality of the limits set at $P = 0.5$.

6.2 Test methods other than those referenced in this standard may be used only if they have been validated in accordance with ASTM D3764 or D6708. Test methods validated by ASTM D4855 prior to 2010 may also be used. These are referred to as validated test methods.

6.2.1 Differences in precision, sensitivity and bias between the referee test methods referenced in the standard and the validated test methods shall be considered.

6.2.2 Validated test methods shall only be used within the bounds of the data covered in their validation.

6.3 In the event of a dispute, the procedures given in 6.1.1 and 6.1.2 shall be used. If parties in a dispute cannot agree on an analytical method to resolve the dispute, the method listed in the standard shall be used. Where more than one method is listed for a given detailed requirement, the referee method shall be used.

6.4 Differences in precision, sensitivity and bias between the referee test methods and others referenced in the standard shall be considered.

	Property	Specified limiting values			
		All grades		Test methods	
		Min.	Max.	ASTM	CGSB (except 6.6)
6.5	Copper strip corrosion, 3 h at 50 °C	—	No. 1	D130	
6.6	Corrosion, steel in water	—	B+	D7548	NACE TM-0172[a]
6.7	Solvent washed gum content, mg/100 mL	—	5	D381	
6.8	Lead content, mg/L[b]	—	5	D3237 D5059	CAN/CGSB-3.0 No.19.5[a]
6.9	Manganese content, mg/L	—	18	D3831	
6.10	Oxidation stability,[c] (Induction period) min.	240	—	D525	
6.11	Phosphorus content, mg/L	—	1.3	D3231	
6.12	Sulphur content, mg/kg (see 6.25)	—	80	D2622 D3120 D5453[a] D7039 D7220	
6.13	Aliphatic ether content, % by mass oxygen[d and e]	—	2.7	D4815 D5599 D6729 D6730	CAN/CGSB-3.0 No. 14.3[a]
6.14	Alcohol content,[e] Methanol, % by volume	—	0.30	D4815 D5599 D6729 D6730	CAN/CGSB-3.0 No. 14.3[a]
	Other alcohols, % by mass oxygen	—	0.50	D4815 D5599 D6729 D6730	CAN/CGSB-3.0 No. 14.3[a]
6.15	Antiknock performance	See Table 1		D2699[a] D2700[a] D2885	
6.16	Vapour pressure[f]	See Tables 3A to 3H		D4953 D5191[a] D5482[g] D6378[h]	

	Property	Specified limiting values			
		All grades		Test methods	
		Min.	Max.	ASTM	CGSB (except 6.6)
6.17	Driveability Index	See Tables 3A to 3H		See 3.4	
6.18	Distillation	See Tables 3A to 3H		D86 [a and i] D7345 [j]	
6.18.1	Final boiling point, °C	—	225	D86 [a and i] D7345 [j]	
6.19	Benzene content,[k] % by volume (see 6.24)	—	1.5	D6729	CAN/CGSB-3.0 No. 14.3[a]
6.20	BEN (see 6.24)[k]	Report			
6.21	Silver Corrosion (see 9.2), Silver Wool or	—	No. B	—	CAN/CGSB-3.0 No. 60.32[a]
	Silver Strip	—	No. 1	D7671	
6.22	Appearance at 20 to 25 °C, visual haze rating	—	1		CAN/CGSB-3.0 No. 28.8

[a] Referee method(s) to be used in the event of a dispute.

[b] The test methods identified were primarily developed for the determination of lead from alkyl lead addition. Caution is advised in the application of these methods when determining lead contamination which is suspected to originate from non-alkyl lead sources.

[c] Oxidation stability can degrade over time. Suppliers should make appropriate allowances in order that this detailed requirement is met at point of sale.

[d] Aliphatic ethers are allowed provided they have

— a minimum of five carbon atoms

— a final boiling point less than or equal to the gasoline 90% distillation point limit.

[e] Small quantities of methanol and other alcohols are permitted to mitigate problems associated with water pickup. If aliphatic ethers, methanol and other alcohols are added in combination, the total oxygen content allowed from such additions remains at a maximum of 2.7% by mass.

[f] Vapour pressures determined using ASTM D5191 are required to be converted to dry vapour pressure equivalents, to determine compliance with the limits given in this standard.

[g] The precision and bias statement developed for ASTM D5482 did not include fuels above 83 kPa. Users are cautioned to develop their own supporting data to establish correlation with the referee method when this method is used to test such fuels.

[h] This test method showed a bias versus ASTM D5191 (the referee test method).

[l] The ASTM Test Method D86 utilises either manual or automated equipment. In cases of dispute, the automated test method shall be selected as the referee test method.

[j] This test method showed relative bias for some results versus the automated D86 (the referee test method).

[k] In this standard, benzene content and BEN requirements shall conform to the *Benzene in Gasoline Regulations*, Schedule 1 (Annex B, B.1.6).

6.23 Deposit control additive

All gasoline retailed in Canada shall contain a deposit control additive sufficient to meet either:

a) an intake valve deposit requirement of less than 100 mg average deposit mass per valve after a 16 093.0 km (10 000 mile) driving cycle, or less than 25 mg average deposit mass per valve after a 8046.5 km (5000 mile) driving cycle as specified by ASTM D5500, or

b) an intake valve deposit requirement of less than 135 mg average deposit mass per valve after a 100 h dynamometer test cycle as specified by ASTM D6201.

6.23.1 The addition of a deposit control additive, sometimes referred to as a detergent package, is required to comply with 6.23. Proof of performance shall be provided by:

a) Certification by the deposit control additive supplier that the dosage recommended to the gasoline marketer/producer meets or exceeds the minimum as listed with the U.S. EPA., or

b) Certification by the marketer/producer that the gasoline meets the intake valve deposit limits given in 6.23 for the ASTM D5500 test, or

c) Certification by the marketer/producer that the gasoline meets the intake valve deposit limits given in 6.23 for the ASTM D6201 test.

In any case, the marketer/producer shall maintain records of volumes of gasoline and additives, to show that the gasoline does contain the amount of additive stated.

6.24 Benzene and BEN (benzene emissions number) are controlled by the Federal *Benzene in Gasoline Regulations* (see Annex B, B.1.6). In accordance with the regulation, the maximum benzene content allowed for any batch of complying gasoline is 1.5% by volume; this applies to primary suppliers (manufacturers, importers or blenders) who elect to produce gasoline to an annual pool average of 0.95%. The regulation also permits primary suppliers to elect a 1.0% by volume flat limit without any associated yearly pool average. A number of options exist for the BEN limit; for details consult the *Benzene in Gasoline Regulations.*

6.25 Sulphur is controlled by the Federal *Sulphur in Gasoline Regulations* (see Annex B, B.1.7). In accordance with the regulations, the maximum sulphur content allowed for any batch of complying low-sulphur gasoline is 80 mg/kg. Primary suppliers (refiners, blenders or importers) may elect to meet an annual pool average of 30 mg/kg. The regulation also permits primary suppliers to elect a 40 mg/kg flat limit without any associated yearly pool average. Starting on January 1, 2017 the annual pool average will drop to 10 mg/kg. The flat limit will drop to 14 mg/kg from January 1, 2017 to December 31, 2019, then to 12 mg/kg starting January 1, 2020. A temporary sulphur compliance unit trading system is in effect from January 1, 2017 until December 31, 2019.

7 Inspection

7.1 Sampling

Sampling equipment and procedures shall be designed and used to obtain representative samples of the product. Sampling lines, hose volumes, etc. should be flushed prior to taking a sample. Sampling containers shall be appropriate for preserving the integrity of the sample for the detailed requirement being determined, and are described in ASTM D5842 and D5854. Sampling procedures recommended in ASTM D4057, D4177, D5842 and D5854 are acceptable but may not be applicable to all situations. Alternative procedures, which may be more appropriate, are described in 7.1.2, 7.1.3 and 7.1.4.

7.1.1 Sample volume shall be consistent with the requirements of the testing laboratory and/or the authority having jurisdiction. Unless otherwise specified (see 8.1), a sample of at least 3 L shall be taken.

7.1.2 Storage tanks

7.1.2.1 Closed loop side stream samplers designed to minimize volatile light-end losses during sampling may be used. The sample shall be transferred to the container using the procedures described in ASTM D5842. If the temperature of either the sample or container is above the initial boiling point of the product, precooling of the sample is required.

7.1.2.2 Samples may be taken from tank recirculation loops, provided that the recirculation time and intensity is sufficient to effect complete mixing of the product in the tank. The sampling probe and sample transfer shall be consistent with the requirements in ASTM D5842.

7.1.3 On-line analyses

The sampling system used for ASTM D2885 may also be used for other on-line analyses. Results may be obtained either as volumetric weighted averages of multiple determinations or as single determinations on proportional samples. The sampling system shall be connected to the on-line analyzer in a manner that ensures sample integrity is maintained.

7.1.4 Retail dispensers

Samples taken from retail dispensers shall be taken as described in ASTM D5842[1] to minimize splashing and vapour loss. The hose shall be flushed immediately prior to taking a sample. A minimum flushing volume of 4 L is required to ensure a representative sample is obtained from all types of dispensers.

7.1.5 Samples for visual inspection are prone to failure due to contamination from rain, snow and dust, or from sediment in sampling lines or equipment. If contamination is detected, a subsequent sample shall be taken to ensure that the contamination is not due to the sampling system.

7.1.6 To determine sampling equipment and procedure requirements, refer to local regulations. To determine sample transport requirements, refer to the *Transportation of Dangerous Goods (TDG) Regulations* (see Annex B, B.1.4).

8 Options

8.1 The following options may be specified in the application of this standard:

a) Grade (see 4.1.1 and Table 1)

b) Volatility requirements (see Tables 3A to 3H)

c) Sample size, if other than as specified (see 7.1.1).

9 Precautions

9.1 Incorporating additives

The user is cautioned against incorporating other additives in the gasoline unless detailed test data are first obtained, confirming that performance is improved without harmful side effects.

[1] Ensure that the sample container material is appropriate for the type of analysis to be performed. Guidelines for sample containers are given in ASTM D5842 and D5854.

9.2 Fuel level sending units

Premature failures of some silver alloy fuel level sending units can relate to reactive sulphur species in gasoline.

9.3 Filtration

It is recommended that all fuel dispensers be equipped with filters of 10 µm or less nominal pore size at point of retail sale to the customer.

9.4 Polymeric contamination

Abnormally high unwashed gums (see ASTM D381), measured prior to the addition of deposit control additives, can provide an indication of contamination by polymeric materials.

Figure 1 — Map of Geographic Zones — Canada Overview

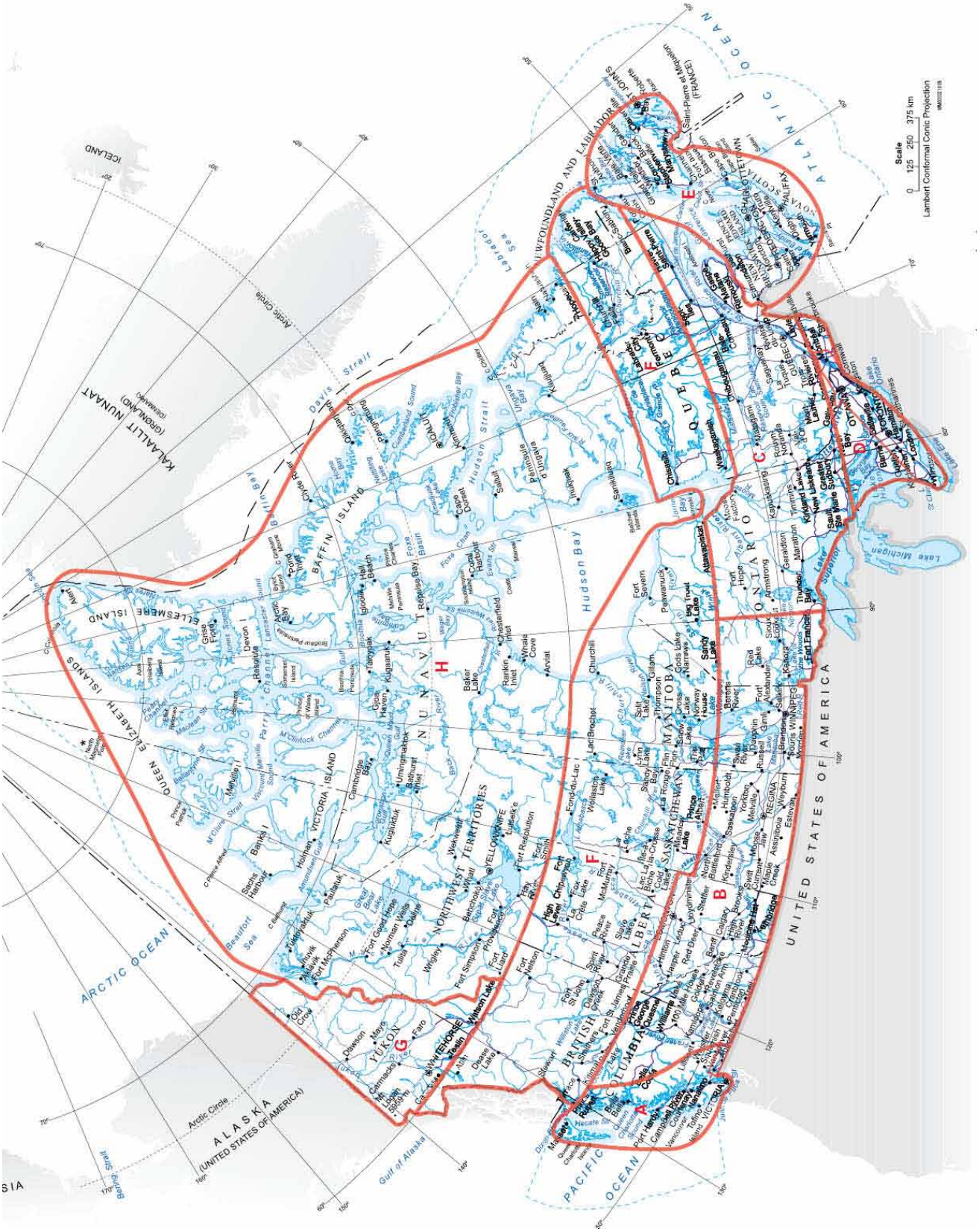

Figure 2 — Map of Geographic Zones — Western Canada

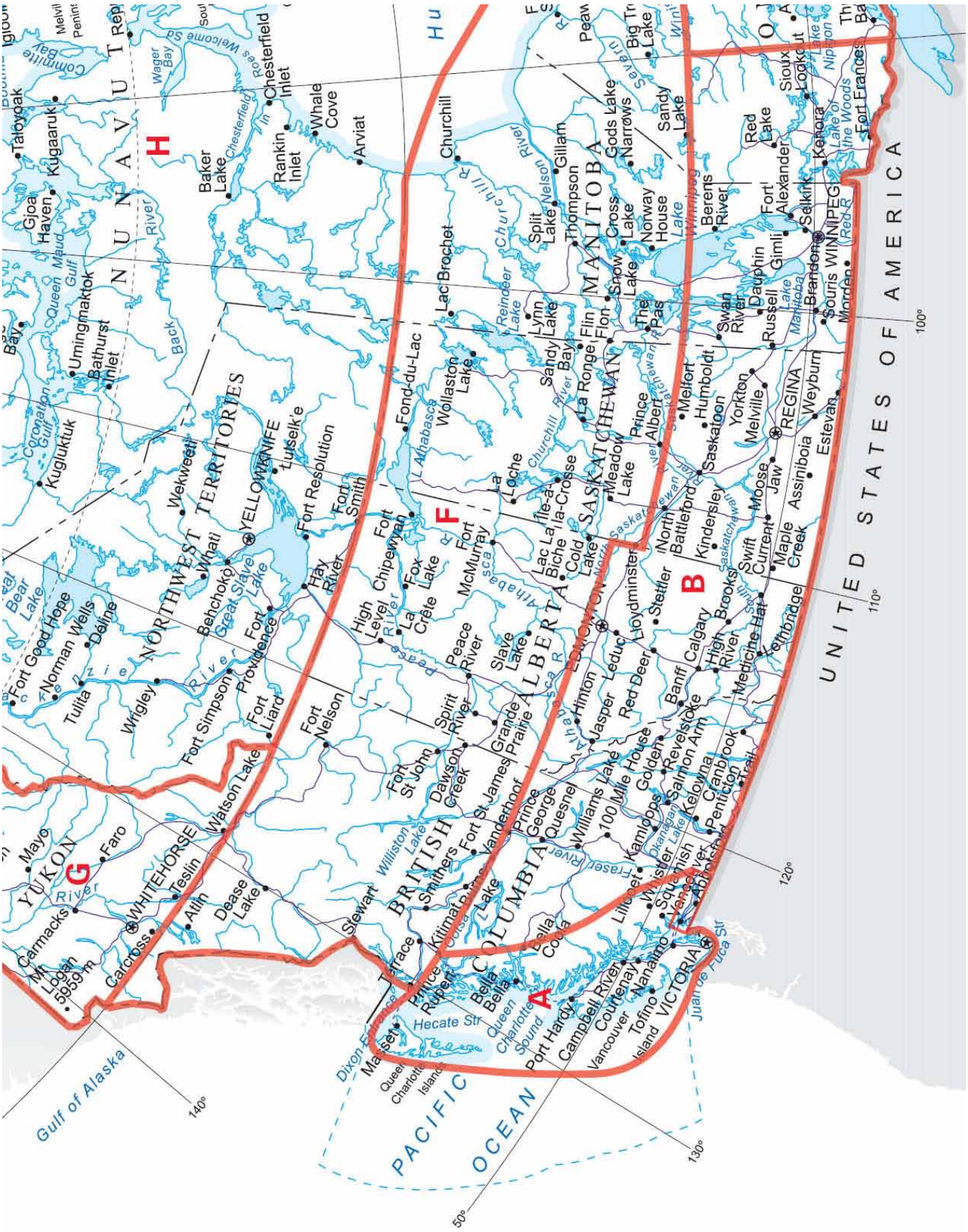

Figure 3 — Map of Geographic Zones — Eastern Canada

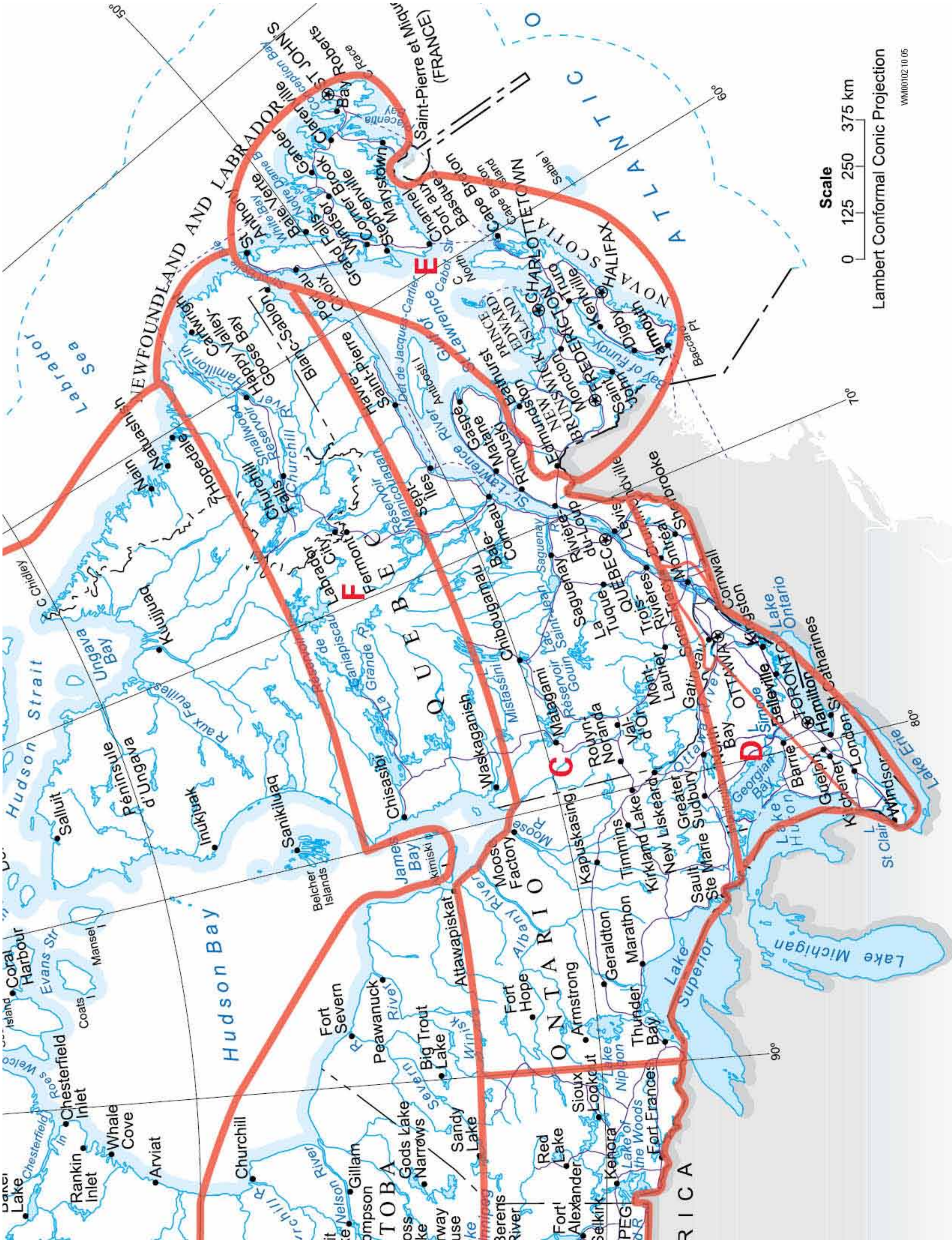

Table 1 — Gasoline antiknock performance

Grade	Antiknock index[a] (*RON* + *MON*)/2 Min.	Motor octane number (*MON*) Min.
Grade 1 — Regular	87.0	82.0
Grade 2 — Mid-grade	89.0	—
Grade 3 — Premium	91.0	—
Grade 4 — Super-Premium	93.0	—

[a] The antiknock index shall be reported to the nearest 0.1 unit at point of manufacture or point of import and to the nearest 0.5 unit at the point of sale using the rounding method described in ASTM E29 (see 6.1.1).

Table 2 — Geographic zone definitions

Zone	Short description	Definition[a]
A	Coastal British Columbia	All the islands off the coast of British Columbia, the Lower Fraser Valley (LFV)[b] and that portion of the mainland within a nominal 100 km of the west coast of British Columbia between latitudes 49° 30´ North and 54° North[c].
B	South Western Canada	The portions of Ontario west of 90° West longitude and south of latitude 53° North, Manitoba south of latitude 53° North, Saskatchewan south of latitude 53° North, Alberta south of latitude 54° North, British Columbia south of latitude 54° North excluding Zone A (Coastal British Columbia).
C	Northern Ontario and Central Quebec	The portions of Ontario north of latitude 46° North, south of latitude 53° North and east of 90° West longitude and Quebec north of latitude 46° North and south of latitude 51° North.
D	Southern Ontario and Southern Quebec	The portions of Ontario and Quebec south of latitude 46° North, including the Seaway Corridor Sub Zone (SCSZ)[d].
E	Atlantic Canada	The island of Newfoundland, the provinces of New Brunswick, Nova Scotia and Prince Edward Island and les Îles de la Madeleine.
F	Northern Canada	The portions of British Columbia and Alberta north of latitude 54° North, Saskatchewan, Manitoba and Ontario north of latitude 53° North; Quebec between latitudes 51° North and 55° North; and Labrador south of latitude 55° North.
G	Yukon	The Territory of the Yukon.
H	Arctic Canada	All of the Northwest Territories, Nunavut and the portions of Quebec (Nunavik) and Labrador north of latitude 55° North.

[a] See Figures 1, 2 and 3 for the approximate locations of the Geographic zones.

[b] The Lower Fraser Valley sub-zone means that part of British Columbia bounded on the north by latitude 49°30', on the west by longitude 123°20', and on the east by longitude 121°15'. It is defined in the BC *Cleaner Gasoline Regulation* (see Annex B, B.2.2.1).

[c] Zone A includes the towns of Whistler and Pemberton. The town of Bella Coola may be supplied with either Zone A or Zone B quality.

[d] The Seaway Corridor Sub-Zone (SCSZ) is defined in two parts:

1) That part of Ontario that lies south of a straight line passing through Arnprior and Grand Bend. Where the line so described runs across a local municipality, the entire local municipality is part of the sub-zone. This is defined by the *Ontario Regulation* (see Annex B, B.2.7.1).

2) That part of Southwestern Quebec defined in the Québec *Petroleum Products Act* (see Annex B, B.2.9.1) as "The Outaouais-Montréal Corridor". See Annex C for the municipalities in the Outaouais-Montréal Corridor.

Table 3A — Volatility requirements for Zone A (Coastal British Columbia)

Zone volatility limits		Coastal British Columbia All the islands off the coast of British Columbia, the Lower Fraser Valley (LFV)[a] and that portion of the mainland within a nominal 100 km of the west coast of British Columbia between latitudes 49° 30´ North and 54° North.									
		Vapour Pressure			T10 Evaporation		T50 Evaporation			T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Max.[b] (kPa) LFV	Min. (°C)	Max. (°C)	Min. (°C)	Min. (°C) LFV	Max. (°C)	Max. (°C)	Max.[c] (°C)
January	1 - 15	45	110		—	60	60		120	190	575
January	16 - 31	45	110		—	60	60		120	190	575
February	1 - 15	45	110		—	60	60		120	190	575
February	16 - 28 (29)	45	110		—	60	60		120	190	575
March	1 - 15	35	110		—	70	60		120	190	590
March	16 - 31	35	110		—	70	60		120	190	590
April	1 - 15	35	110		—	70	60		120	190	590
April	16 - 30	35	97	72[d]	—	70	60	66	120	190	590
May	1 - 15	35	97	72	—	70	60	66	120	190	590
May	16 - 31	35	97	72	—	70	60	66	120	190	590
June	1 - 15	35	72	62	35	70	66		120	190	590
June	16 - 30	35	72	62	35	70	66		120	190	590
July	1 - 15	35	72	62	35	70	66		120	190	590
July	16 - 31	35	72	55	35	70	66		120	190	590
August	1 - 15	35	72	55[d]	35	70	66		120	190	590
August	16 - 31	35	72	62[d]	35	70	66		120	190	590
September	1 - 15	35	97	72	—	70	60	66	120	190	590
September	16 - 30	35	97		—	70	60		120	190	590
October	1 - 15	35	110		—	70	60		120	190	590
October	16 - 31	35	110		—	70	60		120	190	590
November	1 - 15	35	110		—	70	60		120	190	590
November	16 - 30	45	110		—	60	60		120	190	575
December	1 - 15	45	110		—	60	60		120	190	575
December	16 - 31	45	110		—	60	60		120	190	575

[a] The Lower Fraser Valley sub-zone means that part of British Columbia bounded on the north by latitude 49°30', on the west by longitude 123°20', and on the east by longitude 121°15'. It is defined in the BC *Cleaner Gasoline Regulation* (see Annex B, B.2.2.1).

[b] See 5.2.1.

[c] If the required maximum vapour pressure is less than 72 kPa then the maximum DI shall be 597.

[d] LFV: 72 kPa maximum applies starting April 16, 55 kPa maximum only applies ending August 14, 62 kPa maximum applies starting August 15.

Table 3B — Volatility requirements for Zone B (South Western Canada)

Zone volatility limits		South Western Canada The portions of Ontario west of 90° West longitude and south of latitude 53° North, Manitoba south of latitude 53° North, Saskatchewan south of latitude 53° North, Alberta south of latitude 54° North, British Columbia south of latitude 54° North excluding Zone A (Coastal British Columbia).							
		Vapour pressure		T10 Evaporation		T50 Evaporation		T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max.[a] (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	85	110	—	50	60	110	185	540
January	16 - 31	85	110	—	50	60	110	185	540
February	1 - 15	65	110	—	50	60	110	185	550
February	16 - 28 (29)	65	110	—	50	60	110	185	550
March	1 - 15	65	110	—	50	60	110	185	550
March	16 - 31	50	110	—	55	60	110	190	560
April	1 - 15	45	97	—	60	60	120	190	575
April	16 - 30	45	97	—	60	60	120	190	575
May	1 - 15	45	86	—	60	62	120	190	575
May	16 - 31	35	86	—	70	62	120	190	590
June	1 - 15	35	72	35	70	66	120	190	590
June	16 - 30	35	72	35	70	66	120	190	590
July	1 - 15	35	72	35	70	66	120	190	590
July	16 - 31	35	72	35	70	66	120	190	590
August	1 - 15	35	72	35	70	66	120	190	590
August	16 - 31	35	72	35	70	66	120	190	590
September	1 - 15	35	86	—	70	62	120	190	590
September	16 - 30	45	86	—	70	62	120	190	590
October	1 - 15	45	97	—	60	60	120	190	575
October	16 - 31	45	110	—	60	60	120	190	575
November	1 - 15	50	110	—	55	60	110	185	560
November	16 - 30	50	110	—	55	60	110	185	560
December	1 - 15	65	110	—	50	60	110	185	550
December	16 - 31	65	110	—	50	60	110	185	550

[a] See 5.2.1

Table 3C — Volatility requirements for Zone C (Northern Ontario and Central Quebec)

Zone volatility limits		Northern Ontario and Central Quebec The portions of Ontario lying north of latitude 46° North, south of latitude 53° North and east of 90° West longitude and Quebec lying north of latitude 46° North and south of latitude 51° North.							
		Vapour pressure		T10 Evaporation		T50 Evaporation		T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	85	110	—	50	60	110	185	540
January	16 - 31	85	110	—	50	60	110	185	540
February	1 - 15	85	110	—	50	60	110	185	540
February	16 - 28 (29)	65	110	—	50	60	110	185	550
March	1 - 15	65	110	—	50	60	110	185	550
March	16 - 31	50	110	—	55	60	110	185	560
April	1 - 15	50	110	—	55	60	110	185	560
April	16 - 30	45	97	—	60	60	120	190	575
May	1 - 15	45	97	—	60	60	120	190	575
May	16 - 31	35	86	—	70	62	120	190	590
June	1 - 15	35	72	35	70	66	120	190	590
June	16 - 30	35	72	35	70	66	120	190	590
July	1 - 15	35	72	35	70	66	120	190	590
July	16 - 31	35	72	35	70	66	120	190	590
August	1 - 15	35	72	35	70	66	120	190	590
August	16 - 31	35	72	35	70	66	120	190	590
September	1 - 15	35	97[a]	—	70	60	120	190	590
September	16 - 30	35	110	—	70	60	120	190	590
October	1 - 15	45	110	—	60	60	120	190	575
October	16 - 31	45	110	—	60	60	120	190	575
November	1 - 15	45	110	—	60	60	110	190	575
November	16 - 30	50	110	—	55	60	110	185	560
December	1 - 15	65	110	—	50	60	110	185	550
December	16 - 31	65	110	—	50	60	110	185	550

[a] In Ontario the maximum allowable vapour pressure is 72 kPa from September 1 to September 14 as per the *Ontario Volatility Regulation* (see Annex B, B.2.7.1)

Table 3D — Volatility requirements for Zone D (Southern Ontario and Southern Quebec)

Zone volatility limits		Southern Ontario and Southern Quebec The portions of Ontario and Quebec south of latitude 46° North, including the Seaway Corridor Sub Zone (SCSZ)[a]								
		Vapour Pressure		SCSZ Vapour Pressure	T10 Evaporation		T50 Evaporation		T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Max.[b] (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max.[c] (°C)
January	1 - 15	65	110		—	50	60	110	185	550
January	16 - 31	65	110		—	50	60	110	185	550
February	1 - 15	65	110		—	50	60	110	185	550
February	16 - 28 (29)	50	110		—	55	60	110	185	560
March	1 - 15	50	110		—	55	60	110	185	560
March	16 - 31	45	110		—	60	60	120	190	575
April	1 - 15	45	97		—	60	60	120	190	575
April	16 - 30	35	97		—	70	60	120	190	590
May	1 - 15	35	86		—	70	62	120	190	590
May	16 - 31	35	72	62[d]	35	70	66	120	190	590
June	1 - 15	35	72	62[d]	35	70	66	120	190	590
June	16 - 30	35	72	62[d]	35	70	66	120	190	590
July	1 - 15	35	72	62[d]	35	70	66	120	190	590
July	16 - 31	35	72	62[d]	35	70	66	120	190	590
August	1 - 15	35	72	62[d]	35	70	66	120	190	590
August	16 - 31	35	72	62[d]	35	70	66	120	190	590
September	1 - 15	35	72	62[d]	35	70	66	120	190	590
September	16 - 30	35	97		—	70	60	120	190	590
October	1 - 15	45	97		—	70	60	120	190	575
October	16 - 31	45	110		—	60	60	120	190	575
November	1 - 15	45	110		—	60	60	120	190	575
November	16 - 30	45	110		—	60	60	120	190	575
December	1 - 15	50	110		—	55	60	110	185	560
December	16 - 31	50	110		—	55	60	110	185	560

[a] The Seaway Corridor Sub-Zone (SCSZ) is defined in two parts.

1) That part of Ontario that lies south of a straight line passing through Arnprior and Grand Bend. Where the line so described runs across a local municipality, the entire local municipality is part of the sub-zone. This is defined by the *Ontario Regulation* (see Annex B, B.2.7.1).

2) That part of Southwestern Quebec defined in the Québec *Petroleum Products Act* (see Annex B, B.2.9.1) as "The Outaouais-Montréal Corridor".

[b] See 5.2.1.

[c] If the required maximum vapour pressure is less than 72 kPa then the maximum DI shall be 597.

[d] This limit only applies to the Ontario portion of the SCSZ from May 15 to September 14; the point of application is defined in the *Ontario Volatility Regulation* (Annex B, B.2.7.1).

Table 3E — Volatility requirements for Zone E (Atlantic)

Zone volatility limits		Atlantic Canada The island of Newfoundland, the provinces of New Brunswick, Nova Scotia and Prince Edward Island and Les Iles de la Madeleine.											
		Vapour pressure				T10 Evaporation		T50 Evaporation				T90 Evaporation	Driveability index
				Newfoundland					Newfoundland				
Month	Dates	Min. (kPa)	Max. (kPa)	Class 1[a] Max. (kPa)	Class 2[b] Max. (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Class 1[a] Min. (°C)	Class 2[b] Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	65	110	107		—	50	60			110	185	550
January	16 - 31	65	110	107		—	50	60			110	185	550
February	1 - 15	65	110	107		—	50	60			110	185	550
February	16 - 28 (29)	50	110	107		—	55	60			110	185	560
March	1 - 15	50	110	107		—	55	60			110	185	560
March	16 - 31	45	110	107		—	60	60			120	190	575
April	1 - 15	45	110	107		—	60	60			120	190	575
April	16 - 30	35	97	107		—	70	60			120	190	590
May	1 - 15	35	97[c]	97		—	70	60			120	190	590
May	16 - 31	35	72	97	72	35	70	66	60	66	120	190	590
June	1 - 15	35	72	86	72	35	70	66	62	66	120	190	590
June	16 - 30	35	72	86	72	35	70	66	62	66	120	190	590
July	1 - 15	35	72	86	72	35	70	66	62	66	120	190	590
July	16 - 31	35	72	86	72	35	70	66	62	66	120	190	590
August	1 - 15	35	72	86	72	35	70	66	62	66	120	190	590
August	16 - 31	35	72	86	72	35	70	66	62	66	120	190	590
September	1 - 15	35	72	97	72	35	70	66	60	66	120	190	590
September	16 - 30	35	97	97		—	70	60			120	190	590
October	1 - 15	35	110	107		—	70	60			120	190	590
October	16 - 31	45	110	107		—	60	60			120	190	575
November	1 - 15	45	110	107		—	60	60			120	190	575
November	16 - 30	45	110	107		—	60	60			120	190	575
December	1 - 15	50	110	107		—	55	60			110	185	560
December	16 - 31	50	110	107		—	55	60			110	185	560

[a] Newfoundland Class 1 is that part of the Island on Newfoundland lying north of latitude 49° (see Annex B, B.2.5).

[b] Newfoundland Class 2 is that part of the Island on Newfoundland lying south of latitude 49° (see Annex B, B.2.5).

[c] In Nova Scotia and New Brunswick the 72 kPa maximum is required at Terminals starting May 15 (see Annex B, B.2.4 and B.2.6).

Table 3F — Volatility requirements for Zone F (Northern Canada)

Zone volatility limits		Northern Canada The portions of British Columbia and Alberta north of latitude 54° North; Saskatchewan, Manitoba and Ontario north of latitude 53° North; Quebec lying between latitudes 51° North and 55° North; and Labrador south of latitude 55° North.							
		Vapour pressure		T10 Evaporation		T50 Evaporation		T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	85	110	—	50	60	110	185	540
January	16 - 31	85	110	—	50	60	110	185	540
February	1 - 15	85	110	—	50	60	110	185	540
February	16 - 28 (29)	85	110	—	50	60	110	185	540
March	1 - 15	65	110	—	50	60	110	185	550
March	16 - 31	65	110	—	50	60	110	185	550
April	1 - 15	50	110	—	55	60	110	185	560
April	16 - 30	50	97	—	55	60	110	185	560
May	1 - 15	45	97	—	60	60	120	190	575
May	16 - 31	45	97	—	60	60	120	190	575
June	1 - 15	35	97	—	70	60	120	190	590
June	16 - 30	35	86	—	70	62	120	190	590
July	1 - 15	35	86	—	70	62	120	190	590
July	16 - 31	35	86	—	70	62	120	190	590
August	1 - 15	35	86	—	70	62	120	190	590
August	16 - 31	35	86	—	70	62	120	190	590
September	1 - 15	35	97[a]	—	70	60	120	190	590
September	16 - 30	45	97	—	70	60	120	190	575
October	1 - 15	45	110	—	60	60	120	190	575
October	16 - 31	45	110	—	60	60	120	190	575
November	1 - 15	50	110	—	55	60	110	185	560
November	16 - 30	65	110	—	55	60	110	185	550
December	1 - 15	85	110	—	50	60	110	185	540
December	16 - 31	85	110	—	50	60	110	185	540

[a] In Ontario the maximum allowable vapour pressure is 72 kPa from September 1 to September 14 as per the *Ontario Volatility Regulation* (see Annex B, B.2.7.1)

Table 3G — Volatility requirements for Zone G (Yukon)

Zone volatility limits		Yukon The Territory of the Yukon							
		Vapour pressure		T10 Evaporation		T50 Evaporation		T90 Evapora-tion	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	85	110	—	50	60	110	185	540
January	16 - 31	85	110	—	50	60	110	185	540
February	1 - 15	85	110	—	50	60	110	185	540
February	16 - 28 (29)	85	110	—	50	60	110	185	540
March	1 - 15	65	110	—	50	60	110	185	540
March	16 - 31	65	110	—	50	60	110	185	550
April	1 - 15	50	110	—	50	60	110	185	550
April	16 - 30	45	110	—	55	60	110	185	560
May	1 - 15	45	97	—	60	60	120	190	575
May	16 - 31	35	97	—	70	60	120	190	590
June	1 - 15	35	97	—	70	60	120	190	590
June	16 - 30	35	86	—	70	62	120	190	590
July	1 - 15	35	86	—	70	62	120	190	590
July	16 - 31	35	86	—	70	62	120	190	590
August	1 - 15	35	86	—	70	62	120	190	590
August	16 - 31	35	97	—	60	60	120	190	575
September	1 - 15	35	110	—	60	60	120	190	575
September	16 - 30	45	110	—	60	60	120	190	575
October	1 - 15	45	110	—	60	60	120	190	575
October	16 - 31	50	110	—	55	60	110	185	560
November	1 - 15	65	110	—	50	60	110	185	540
November	16 - 30	85	110	—	50	60	110	185	540
December	1 - 15	85	110	—	50	60	110	185	540
December	16 - 31	85	110	—	50	60	110	185	540

Table 3H — Volatility requirements for Zone H (Arctic Canada)

Zone volatility limits[a]		Arctic Canada All of the Northwest Territories, Nunavut, and the portions of Quebec, Nunavik and Labrador north of latitude 55° North.							
		Vapour pressure		T10 Evaporation		T50 Evaporation		T90 Evaporation	Driveability index
Month	Dates	Min. (kPa)	Max. (kPa)	Min. (°C)	Max. (°C)	Min. (°C)	Max. (°C)	Max. (°C)	Max. (°C)
January	1 - 15	85	110	—	50	60	110	185	540
January	16 - 31	85	110	—	50	60	110	185	540
February	1 - 15	85	110	—	50	60	110	185	540
February	16 - 28 (29)	85	110	—	50	60	110	185	540
March	1 - 15	85	110	—	50	60	110	185	540
March	16 - 31	85	110	—	50	60	110	185	550
April	1 - 15	65	110	—	50	60	110	185	550
April	16 - 30	50	97	—	55	60	110	185	560
May	1 - 15	50	97	—	55	60	110	185	560
May	16 - 31	45	86	—	60	62	120	190	575
June	1 - 15	45	86	—	60	62	120	190	575
June	16 - 30	45	86	—	60	62	120	190	575
July	1 - 15	45	86	—	60	62	120	190	575
July	16 - 31	45	86	—	60	62	120	190	575
August	1 - 15	45	86	—	60	62	120	190	575
August	16 - 31	45	97	—	60	60	120	190	575
September	1 - 15	50	110	—	55	60	110	185	560
September	16 - 30	65	110	—	50	60	110	185	550
October	1 - 15	65	110	—	50	60	110	185	550
October	16 - 31	65	110	—	50	60	110	185	550
November	1 - 15	85	110	—	50	60	110	185	540
November	16 - 30	85	110	—	50	60	110	185	540
December	1 - 15	85	110	—	50	60	110	185	540
December	16 - 31	85	110	—	50	60	110	185	540

[a] Where fuel is normally delivered in the summer or fall for use during the following winter the delivered fuel shall meet the volatility requirements for the November 1 to March 31 period. The intent is to ensure cold start and warm-up performance during winter.

Annex A
(normative)

Referenced ASTM International publications (see 2.4)

Annual Book of ASTM Standards

D86 Standard Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure

D130 Standard Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test

D381 Standard Test Method for Gum Content in Fuels by Jet Evaporation

D525 Standard Test Method for Oxidation Stability of Gasoline (Induction Period Method)

D2622 Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

D2699 Standard Test Method for Research Octane Number of Spark-Ignition Engine Fuel

D2700 Standard Test Method for Motor Octane Number of Spark-Ignition Engine Fuel

D2885 Standard Test Method for Research and Motor Method Octane Ratings Using On-Line Analyzers

D3120 Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

D3231 Standard Test Method for Phosphorus in Gasoline

D3237 Standard Test Method for Lead in Gasoline by Atomic Absorption Spectroscopy

D3244 Standard Practice for Utilization of Test Data to Determine Conformance with Specifications

D3764 Standard Practice for Validation of Process Stream Analyzer Systems

D3831 Standard Test Method for Manganese in Gasoline by Atomic Absorption Spectroscopy

D4057 Standard Practice for Manual Sampling of Petroleum and Petroleum Products

D4177 Standard Practice for Automatic Sampling of Petroleum and Petroleum Products

D4815 Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C_1 to C_4 Alcohols in Gasoline by Gas Chromatography

D4855 Standard Practice for Comparing Test Methods

D4953 Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)

D5059 Standard Test Method for Lead in Gasoline by X-Ray Spectroscopy

D5191 Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method)

D5453 Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence

D5482 Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method-Atmospheric)

D5500 Standard Test Method for Vehicle Evaluation of Unleaded Automotive Spark-Ignition Engine Fuel for Intake Valve Deposit Formation

D5599 Standard Test Method for Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection

D5842 Standard Practice for Sampling and Handling of Fuels for Volatility Measurement

D5854 Standard Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products

D6201 Standard Test Method for Dynamometer Evaluation of Unleaded Spark-Ignition Engine Fuel for Intake Valve Deposit Formation

D6378 Standard Test Method for Determination of Vapor Pressure (VPX) of Petroleum Products, Hydrocarbons, and Hydrocarbon-Oxygenate Mixtures (Triple Expansion Method)

D6708 Standard Practice for Statistical Assessment and Improvement of Expected Agreement Between Two Test Methods that Purport to Measure the Same Property of a Material

D6729 Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100-Metre Capillary High Resolution Gas Chromatography

D6730 Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100-Metre Capillary (with Precolumn) High-Resolution Gas Chromatography

D7039 Standard Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry

D7220 Standard Test Method for Sulfur in Automotive, Heating, and Jet Fuels by Monochromatic Energy Dispersive X-ray Fluorescence Spectrometry

D7345 Standard Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure (Micro Distillation Method)

D7548 Standard Test Method for Determination of Accelerated Iron Corrosion in Petroleum Products

D7671 Standard Test Method for Corrosiveness to Silver by Automotive Spark - Ignition Engine Fuel — Silver Strip Method

E29 Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.

Annex B
(informative)

Federal, provincial and territorial acts and regulations applicable to automotive gasoline (see 2.2)[2]

B.1 Federal acts and regulations[3]

B.1.1 **Fuels Information Regulations, No. 1** (C.R.C., c.407 as amended by SOR/79-280, 80-138, 2000-105)

These regulations require producers and importers to submit information on sulphur and additive contents (other than lead).

B.1.2 **Gasoline Regulations** (SOR/90-247)

These regulations limit the lead content in unleaded gasoline, restrict leaded gasoline use, and require reporting of lead used in gasoline production. They also limit phosphorus content in gasoline (see 6.8 and 6.11).

B.1.3 **Contaminated Fuel Regulations** (SOR/91-486)

These regulations prohibit the importation of fuels that have been contaminated with hazardous wastes.

B.1.4 **Transportation of Dangerous Goods Regulations** (SOR/2001-286)

These regulations give detailed packaging, labelling and documentation requirements for transporting gasoline samples within Canada.

B.1.5 **Renewable Fuels Regulations** (SOR/2010-189)

These regulations require the use of renewable fuels in Canada.

B.1.6 **Benzene in Gasoline Regulations** (SOR/97-493)

These regulations establish the limits for benzene and BEN in gasoline and in oxygenates (see 6.19 and 6.20).

B.1.7 **Sulphur in Gasoline Regulations** (SOR/99-236)

These regulations establish the limits for sulphur in gasoline and in oxygenates (see 6.12 and 6.25).

B.2 Provincial and territorial regulations

B.2.1 Alberta

B.2.1.1 Renewable fuel requirements

Renewable fuel requirements are controlled under the *Renewable Fuel Standard Regulation*, Regulation 29/2010.

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[2] The regulations listed are subject to revision by the relevant authority. The user should consult the relevant authority to confirm the current regulations. The information provided about the regulations is for information only. In case of conflict, the text of the regulation takes precedence. If any of Web sites referenced becomes inoperative, regulations may also be found at the Web site www.canlii.com.

[3] These regulations may be obtained from the Department of Justice Canada (see 2.2.1).

B.2.2 British Columbia

B.2.2.1 General requirements and vapour pressure

General requirements and vapour pressure are controlled under the latest version of the *Cleaner Gasoline Regulation* (B.C. Reg. 498/95)[4].

B.2.2.2 **Renewable and Low Carbon Fuel Requirements Regulation** (BC Reg. 320/2009)

Requirements for the content of renewable material in fuel and requirements for the reduction of fuel carbon intensity are controlled under the *Renewable and Low Carbon Fuel Requirements Regulation.*

B.2.3 Manitoba

B.2.3.1 General requirements and vapour pressure

General requirements and vapour pressure are controlled under the latest version of the *Dangerous Goods Handling and Transportation Act, including the Dangerous Goods Handling and Transportation Regulation* (55/2003) and the *Storage and Handling of Petroleum Products and Allied Products Regulation* (188/2001).[5]

B.2.3.2 Ethanol requirements

Ethanol requirements are controlled under the *Ethanol General Regulation, Regulation* 165/2007.

B.2.4 New Brunswick

B.2.4.1 Vapour pressure

Vapour pressure is controlled under the *Clean Air Act* and Reg*ulations — Air Quality Regulation* (N.B. Reg. 97-133).

B.2.5 Newfoundland and Labrador

B.2.5.1 Vapour pressure

Vapour pressure is controlled under the *Environmental Protection Act* and Regulations — *Gasoline Volatility Control Regulations*.

B.2.6 Nova Scotia

B.2.6.1 Vapour pressure

Vapour pressure is controlled under the *Environment Act* and Regulations — *Air Quality Regulations* (N.S. Reg. 55/95).

B.2.7 Ontario

B.2.7.1 Vapour pressure

Vapour pressure is controlled under the latest version of *Ontario Regulation 271/91*, as amended by *Ontario Regulation 45/97*.[6]

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[4] Available from the British Columbia Ministry of Environment, Lands and Parks, telephone 604-927-2914. Web site at www.elp.gov.bc.ca.

[5] Available from the Government of Manitoba, www.gov.mb.ca/conservation/envprograms/haz-waste/prov-leg/index.html.

[6] Available from the Ontario e-Laws Ontario Statutes and Regulations Web site at http://www.e-laws.gov.on.ca.

B.2.7.2 Fuel products

Definitions (as per CGSB standards) listed under the latest revision of the *Technical Standards and Safety Act — Liquid Fuels Handling Code.*

B.2.7.3 Ethanol requirements

Ethanol requirements are controlled under the *Ethanol in Gasoline Ontario Regulation* 535/05.

B.2.8 Prince Edward Island

B.2.8.1 General requirements

General requirements are controlled under the *Petroleum Products Act Regulations* (EC38/91).

B.2.9 Quebec

B.2.9.1 General requirements

The general requirements are controlled under the latest version of the *Loi sur les produits pétroliers*, R.S.Q., c. P-30.1, *Règlement sur les produits pétroliers*, D.581-2015, G.O. 28, 2147 or *Petroleum Products Act*, R.S.Q., c. P-30.01, *Petroleum Products Regulation*, O.C. 581-2015, G.O. 28, 1375B[7]. This regulation lists Quebec quality requirements for aviation gasolines, aviation turbine fuels, automotive gasolines, gasolines containing denatured fuel ethanol for use in automotive spark ignition fuels, diesel fuels, diesel fuels containing biodiesel (B100) for blending in middle distillate fuels, fuel oil types 0, 1 and 2, and fuel oil types 4, 5 and 6. Amendments and editions published apply only 90 days after the last day of the month that the French text of the amendments or editions was published. The Direction générale des hydrocarbures et des biocombustibles of the ministère de l'Énergie et des Ressources naturelles is responsible for the application and revision of this regulation. Web site www.mern.gouv.qc.ca/english/energy/index.jsp.

B.2.10 Saskatchewan

B.2.10.1 Ethanol requirements

Ethanol requirements are controlled under the *Ethanol Fuel (General) Regulations*, 115/2002 as amended.

B.2.11 Yukon

B.2.11.1 General requirements

General requirements are controlled under the *Gasoline Handling Act* and Regulations — *Gasoline Handling Regulations* (O. C. 1972/137).

[7] Available from Les Publications du Québec, telephone 1-800-463-2100 or 418-643-5150. Fax 1-800-561-3479 or 418-643-6177. Also available on-line at http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=1&file=102225.pdf.

Annex C
(normative)

List of municipalities in the Outaouais-Montréal corridor

Municipalities are listed either by regional county municipalities (RCM) or, by administrative region or metropolitan community. The indicated numbers correspond to the codes assigned to each municipality, RCM, administrative region or metropolitan community in the Répertoire des municipalités published by the Ministère des Affaires Municipales, des Régions et de l'Occupation du Territoire.

530 PIERRE DE SAUREL
53085 Saint-Gérard-Majella, P
550 ROUVILLE
55023 Saint-Césaire, V
55030 Sainte-Angèle-de-Monnoir, M
55037 Rougemont, M
55048 Marieville, V
55057 Richelieu, V
55065 Saint-Mathias-sur-Richelieu, M
560 LE HAUT-RICHELIEU
56083 Saint-Jean-sur-Richelieu, V
56097 Mont-Saint-Grégoire, M
56105 Sainte-Brigide-d'Iberville, M
570 LA VALLÉE-DU-RICHELIEU
57005 Chambly, V
57010 Carignan, V
57020 Saint-Basile-le-Grand, V
57025 McMasterville, M
57030 Otterburn Park, V
57033 Saint-Jean-Baptiste, M
57035 Mont-Saint-Hilaire, V
57040 Beloeil, V
57045 Saint-Mathieu-de-Beloeil, M
57050 Saint-Marc-sur-Richelieu, M
57057 Saint-Charles-sur-Richelieu, M
57068 Saint-Denis-sur-Richelieu, M
57075 Saint-Antoine-sur-Richelieu, M
590 MARGUERITE D'YOUVILLE
59010 Sainte-Julie, V
59015 Saint-Amable, M
59020 Varennes, V
59025 Verchères, M
59030 Calixa-Lavallée, P
59035 Contrecoeur, V
600 L'ASSOMPTION
60005 Charlemagne, V
60013 Repentigny, V
60020 Saint-Sulpice, P
60028 L'Assomption, V
60035 L'Épiphanie, V
60040 L'Épiphanie, P
630 MONTCALM
63005 Sainte-Marie-Salomé, P
63013 Saint-Jacques, M
63023 Saint-Alexis, M
63030 Saint-Esprit, M
63035 Saint-Roch-de-l'Achigan, M
63040 Saint-Roch-Ouest, M
63048 Saint-Lin-des-Laurentides, V
63055 Saint-Calixte, M
63060 Sainte-Julienne, M
63065 Saint-Liguori, P
640 LES MOULINS
64008 Terrebonne, V
64015 Mascouche, V
13 OUTSIDE AN RCM / LAVAL
65005 Laval, V
663 OUTSIDE AN RCM / COMMUNAUTÉ MÉTROPOLITAINE DE MONTRÉAL
58007 Brossard, V
58012 Saint-Lambert, V
58033 Boucherville, V
58037 Saint-Bruno-de-Montarville, V
58227 Longueuil, V
66007 Montréal-Est, V
66023 Montréal, V
66032 Westmount, V
66047 Montréal-Ouest, V
66058 Côte-Saint-Luc, V
66062 Hampstead, V
66072 Mont-Royal, V
66087 Dorval, V
66092 L'Île-Dorval, V
66097 Pointe-Claire, V
66102 Kirkland, V
66107 Beaconsfield, V
66112 Baie d'Urfé, V
66117 Sainte-Anne-de-Bellevue, V
66127 Senneville, VL
66135 Sainte-Geneviève, V
66142 Dollard-des-Ormeaux, V
16 OUTSIDE AN RCM / MONTÉRÉGIE
67802 Kahnawake, R.I.
69802 Akwesasne, R.I.
670 ROUSSILLON
67005 Saint-Mathieu, M
67010 Saint-Philippe, M
67015 La Prairie, V
67020 Candiac, V
67025 Delson, V

67030 Sainte-Catherine, V
67035 Saint-Constant, V
67040 Saint-Isidore, P
67045 Mercier, V
67050 Châteauguay, V
67055 Léry, V
680 LES JARDINS-DE-NAPIERVILLE
68020 Sainte-Clotilde-de-Châteauguay, P
68025 Saint-Patrice-de-Sherrington, P
68040 Saint-Jacques-le-Mineur, P
68045 Saint-Édouard, P
68050 Saint-Michel, P
68055 Saint-Rémi, V
690 LE HAUT-SAINT-LAURENT
69010 Franklin, M
69017 Saint-Chrysostome, M
69025 Howick, VL
69030 Très-Saint-Sacrement, P
69037 Ormstown, M
69045 Hinchinbrooke, CT
69050 Elgin, CT
69055 Huntingdon, V
69060 Godmanchester, CT
69065 Sainte-Barbe, P
69070 Saint-Anicet, P
69075 Dundee, CT
700 BEAUHARNOIS-SALABERRY
70005 Saint-Urbain-Premier, M
70012 Sainte-Martine, M
70022 Beauharnois, V
70030 Saint-Étienne-de-Beauharnois, M
70035 Saint-Louis-de-Gonzague, P
70040 Saint-Stanislas-de-Kostka, P
70052 Salaberry-de-Valleyfield, V
710 VAUDREUIL-SOULANGES
71005 Rivière-Beaudette, M
71015 Saint-Télesphore, P
71020 Saint-Polycarpe, M
71025 Saint-Zotique, VL
71033 Les Coteaux, M
71040 Coteau-du-Lac, M
71045 Saint-Clet, M
71050 Les Cèdres, M
71055 Pointe-des-Cascades, VL
71060 L'Île-Perrot, V
71065 Notre-Dame-de-L'Île-Perrot, V
71070 Pincourt, V
71075 Terrasse-Vaudreuil, M
71083 Vaudreuil-Dorion, V
71090 Vaudreuil-sur-le-Lac, VL
71095 L'Île-Cadieux, V
71100 Hudson, V
71105 Saint-Lazare, V
71110 Sainte-Marthe, M
71115 Sainte-Justine-de-Newton, P
71125 Très-Saint-Rédempteur, P
71133 Rigaud, M
71140 Pointe-Fortune, VL
720 DEUX-MONTAGNES
72005 Saint-Eustache, V
72010 Deux-Montagnes, V
72015 Sainte-Marthe-sur-le-Lac, V
72020 Pointe-Calumet, M
72025 Saint-Joseph-du-Lac, M
72032 Oka, M
72043 Saint-Placide, M
730 THÉRÈSE-DE-BLAINVILLE
73005 Boisbriand, V
73010 Sainte-Thérèse, V
73015 Blainville, V
73020 Rosemère, V
73025 Lorraine, V
73030 Bois-des-Filion, V
73035 Sainte-Anne-des-Plaines, V
15 OUTSIDE AN RCM / LAURENTIDES
74005 Mirabel, V
750 LA RIVIÈRE-DU-NORD
75005 Saint-Colomban, P
75017 Saint-Jérôme, V
75028 Sainte-Sophie, M
75040 Prévost, V
75045 Saint-Hippolyte, P
760 ARGENTEUIL
76008 Saint-André-d'Argenteuil, M
76020 Lachute, V
76025 Gore, CT
76030 Mille-Isles, M
76035 Wentworth, CT
76043 Brownsburg-Chatham, V
76055 Grenville, VL
76052 Grenville-sur-la-Rouge, M
76065 Harrington, CT
770 LES PAYS-D'EN-HAUT
77022 Sainte-Adèle, V
77030 Piedmont, M
77035 Sainte-Anne-des-Lacs, P
77043 Saint-Sauveur, V
77050 Morin-Heights, M
800 PAPINEAU
80005 Fassett, M
80010 Montebello, M
80015 Notre-Dame-de-Bon-Secours, M
80020 Notre-Dame-de-la-Paix, M
80027 Saint-André-Avellin, M
80037 Papineauville, M
80045 Plaisance, M
80050 Thurso, V
80055 Lochaber, CT
80060 Lochaber-Partie-Ouest, CT
80065 Mayo, M
80070 Saint-Sixte, M
80078 Ripon, M

80085 Mulgrave-et-Derry, M
07 OUTSIDE AN RCM / OUTAOUAIS
81015 Gatineau, V
820 LES COLLINES-DE-L'OUTAOUAIS
82005 L'Ange-Gardien, M
82010 Notre-Dame-de-la-Salette, M
82015 Val-des-Monts, M
82020 Cantley, M
82025 Chelsea, M
82030 Pontiac, M
82035 La Pêche, M
840 PONTIAC
84005 Bristol, M
84010 Shawville, M
84015 Clarendon, M
84020 Portage-du-Fort, VL
84025 Bryson, M
84030 Campbell's Bay, M
84035 Grand-Calumet, M
84040 Litchfield, M
84045 Thorne, M