1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current **Removed text is bold, underlined with a strike though**	NEW **New text is bold and underlined**
B.1.3.1	B.1.3.1 Explosives shall be classified as unstable explosives or shall be assigned to one of the six divisions identified in B.1.2 in accordance with the three step procedure in Part I of the UN ST/SG/AC.10 (incorporated by reference; See §1910.6). The first step is to ascertain whether the substance or mixture has explosive effects (Test Series 1). The second step is the acceptance procedure (Test Series 2 to 4) and the third step is the assignment to a hazard division (Test Series 5 to 7). The assessment whether a candidate for "ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE)" is insensitive enough for inclusion as an oxidizing liquid (See B.13) or an oxidizing solid (See B.14) is determined by Test Series 8 tests.	B.1.3.1 Explosives shall be classified as unstable explosives or shall be assigned to one of the six divisions identified in B.1.2 in accordance with the three step procedure in Part I of UN ST/SG/AC.10 (incorporated by reference, see §1910.6). The first step is to ascertain whether the substance or mixture has explosive effects (Test Series 1). The second step is the acceptance procedure (Test Series 2 to 4) and the third step is the assignment to a hazard division (Test Series 5 to 7). The assessment whether a candidate for "ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE)" is insensitive enough for inclusion as an oxidizing liquid (see B.13 **of this appendix)** or an oxidizing solid (see B.14 **of this appendix**) is determined by Test Series 8 tests of UN ST/SG/AC.10/.

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
NOTE:	NOTE: Classification of solid chemicals shall be based on tests performed on the chemical as presented. If, for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, classification must be based on testing of the chemical in the new form.	NOTE 1: Classification of solid chemicals shall be based on tests performed on the chemical as presented. If, for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, classification must be based on testing of the chemical in the new form. **NOTE 2: Some explosive chemicals are wetted with water or alcohols, diluted with other substances or dissolved or suspended in water or other liquid substances to suppress or reduce their explosive properties or sensitivity.These chemicals shall be classified as desensitized explosives (see Chapter B.17).** **NOTE 3: Chemicals with a positive result in Test Series 2 in Part I, Section 12 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference; see §1910.6) which are exempted from classification as explosives (based on a negative result in Test Series 6 in Part I, Section 16 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference; see §1910.6)), still have explosive properties. The explosive properties of the chemical shall be communicated in Section 2 (Hazard identification) and Section 9 (Physical and chemical properties) of the Safety Data Sheet, as appropriate.**
B.2.1	B.2.1 Definition Flammable gas means a gas having a flammable range with air at 20°C (68°F) and a standard pressure of 101.3 kPa (14.7 psi).	B.2.1 Definition Flammable gas means a gas having a flammable range with air at 20°C (68°F) and a standard pressure of 101.3 kPa (14.7 psi). **A pyrophoric gas means a flammable gas that is liable to ignite spontaneously in air at a temperature of 54°C (130°F) or below.** **A chemically unstable gas means a flammable gas that is able to react explosively even in the absence of air or oxygen.**
B.2.2	B.2.2 Classification criteria ~~**A flammable gas shall be classified in one of the two categories for this class in accordance with Table B.2.1:**~~	B.2.2 Classification criteria
B.2.2.1		B.2.2.1 A flammable gas shall be classified in Category 1A, 1B, or 2 in accordance with Table B.2.1:

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
Table B.2.1	Table B.2.1: Criteria for flammable gases	Table B.2.1: Criteria for flammable gases **(update table and notes)**
B.2.3	B.2.3 Additional classification considerations ~~**Flammability shall be determined by tests or by calculation in accordance with ISO 10156 (incorporated by reference; See §1910.6). Where insufficient data are available to use this method, equivalent validated methods may be used**~~	B.2.3 Additional classification considerations
B.2.3.1		**B.2.3.1 Flammability shall be determined by tests or by calculation in accordance with ISO 10156:1996 or ISO 10156:2017 (incorporated by reference; see §1910.6) and, if using fundamental burning velocity for Category 1B, use Annex C: Method of test for burning velocity measurement of flammable gases of ISO 817:2014(E) (incorporated by reference; see §1910.6). Where insufficient data are available to use this method, equivalent validated methods may be used.**
B.2.3.2		**B.2.3.2 Pyrophoricity shall be determined at 130 °F (54 °C) in accordance with either IEC 60079-20-1 or DIN 51794:2003 (incorporated by reference; see §1910.6).**
B.2.3.3		**B.2.3.3 The classification procedure for pyrophoric gases need not be applied when experience in production or handling shows that the substance does not ignite spontaneously on coming into contact with air at a temperature of 130 °F (54 ºC) or below. Flammable gas mixtures, which have not been tested for pyrophoricity and which contain more than one percent pyrophoric components shall be classified as a pyrophoric gas. Expert judgement on the properties and physical hazards of pyrophoric gases and their mixtures should be used in assessing the need for classification of flammable gas mixtures containing one percent or less pyrophoric components. In this case, testing need only be considered if expert judgement indicates a need for additional data to support the classification process.**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.2.3.4		**B.2.3.4 Chemical instability shall be determined in accordance with the method described in Part III of the UN ST/SG/AC.10/11/Rev.6 (incorporated by reference; see §1910.6). If the calculations performed in accordance with ISO 10156:1996 or ISO 10156:2017 (incorporated by reference; see § 1910.6) show that a gas mixture is not flammable, no additional testing is required for determining chemical instability for classification purposes.**
B.3	B.3 ~~**FLAMMABLE**~~ AEROSOLS	B.3 AEROSOLS **AND CHEMICALS UNDER PRESSURE**
B.3.1	~~**B.3.1 Definition**~~ ~~**Aerosol means any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, and fitted with a release device allowing the contents to be ejected as particles in suspension in a gas, or as a foam, paste, powder, liquid or gas.**~~	**B.3.1 Aerosols**
B.3.1.1 Definition		**B.3.1.1 Definition** **Aerosol means any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, and fitted with a release device allowing the contents to be ejected as particles in suspension in a gas, or as a foam, paste, powder, liquid or gas.**
B.3.1.2		**B.3.1.2 Classification criteria**
B.3.1.2.1		**B.3.1.2.1 Aerosols are classified in one of three categories, depending on their flammable properties and their heat of combustion. Aerosols shall be considered for classification in Categories 1 or 2 if they contain more than 1% components (by mass) which are classified as flammable in accordance with this Appendix B, i.e.: Flammable gases (see B.2); Flammable liquids (see B.6) Flammable solids (see B.7) or if their heat of combustion is at least 20 kJ/g.**
B.3.1.2.2		**B.3.1.2.2 An aerosol shall be classified in one of the three categories for this class in accordance with Table B.3.1.**
Table B.3.1		**Table B.3.1: Criteria for aerosols (update table and notes)**
B.3.2	~~**B.3.2 Classification criteria**~~	

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.3.2.1	~~B.3.2.1 Aerosols shall be considered for classification as flammable if they contain any component which is classified as flammable in accordance with this Appendix, i.e.:~~ ~~Flammable liquids (See B.6);~~ ~~Flammable gases (See B.2);~~ ~~Flammable solids (See B.7).~~ ~~NOTE 1: Flammable components do not include pyrophoric, self-heating or water-reactive chemicals.~~ ~~NOTE 2: Flammable aerosols do not fall additionally within the scope of flammable gases, flammable liquids, or flammable solids.~~	
B.3.2.2	~~B.3.2.2 A flammable aerosol shall be classified in one of the two categories for this class in accordance with Table B.3.1.~~	
Table B.3.1	Table B.3.1: Criteria for flammable aerosols	**updated to Table B.3.1 Criteria for aerosols**
B.3.2		**B.3.2 Chemicals under pressure**
		B.3.2.1 Definition **Chemicals under pressure are liquids or solids (e.g., pastes or powders), pressurized with a gas at a pressure of 200 kPa (gauge) or more at 20 °C in pressure receptacles other than aerosol dispensers and which are not classified as gases under pressure.** **NOTE: Chemicals under pressure typically contain 50 % or more by mass of liquids or solids whereas mixtures containing more than 50 % gases are typically considered as gases under pressure**
B.3.2.2		**B.3.2.2 Classification criteria**
B.3.2.2.1		**B.3.2.2.1 Chemicals under pressure are classified in one of three categories of this hazard class, in accordance with Table B.3.2, depending on their content of flammable components and their heat of combustion**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.3.2.2.2		**B.3.2.2.2 Flammable components are components which are classified as flammable in accordance with the GHS criteria, i.e.: – Flammable gases (see B..2 of this section); – Flammable liquids (see B.6 of this section); – Flammable solids (see B.7 of this section).**
Table B.3.2:		**Table B.3.2: Criteria for chemicals under pressure (update table and notes)**
B.3.3.1	~~**B.3.3.1 To classify a flammable aerosol, data on its flammable components, on its chemical heat of combustion and, if applicable, the results of the aerosol foam flammability test (for foam aerosols) and of the ignition distance test and enclosed space test (for spray aerosols) are necessary.**~~	
	~~**The chemical heats of combustion shall be found in literature, calculated or determined by tests (See ASTM D240-02, ISO 13943, Sections 86.1 to 86.3, and NFPA 30B (incorporated by reference; See §1910.6)).**~~	
B.3.3.3	~~**B.3.3.3 The Ignition Distance Test, Enclosed Space Ignition Test and Aerosol Foam Flammability Test shall be performed in accordance with sub-sections 31.4, 31.5 and 31.6 of the of the UN ST/SG/AC.10 (incorporated by reference; See §1910.6).**~~	**B.3.3.3 The chemical heats of combustion shall be found in literature, calculated or determined by tests: (see ASTM D240; Sections 86.1 to 86.3 of ISO 13943; and NFPA 30B (incorporated by reference; see §1910.6)).**
B.3.3.4		**B.3.3.4 The Ignition Distance Test, Enclosed Space Ignition Test and Aerosol Foam Flammability Test shall be performed in accordance with sub-sections 31.4, 31.5 and 31.6 of UN ST/SG/AC.10 (incorporated by reference; see §1910.6).**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current **Removed text is bold, underlined with a strike though**	NEW **New text is bold and underlined**
B.4.1	B.4.1 Definition Oxidizing gas means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does. NOTE: "Gases which cause or contribute to the combustion of other material more than air does" means pure gases or gas mixtures with an oxidizing power greater than 23.5% (as determined by a method specified in ISO 10156 or 10156-2 (incorporated by reference, See §1910.6)or an equivalent testing method.)	B.4.1 Definition Oxidizing gas means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does. NOTE: "Gases which cause or contribute to the combustion of other material more than air does" means pure gases or gas mixtures with an oxidizing power greater than 23.5% (as determined by a method specified in ISO 10156:1**996, ISO 10156:2017 or 10156-2:2005** (incorporated by reference; see §1910.6) or an equivalent testing method).
Table B.5.1	Table B.5.1: Criteria for gases under pressure	Table B.5.1: Criteria for gases under pressure **(update table and notes)**
Note to Table B.6.1		**Note to Table B.6.1 NOTE: Aerosols should not be classified as flammable liquids. See Appendix B.3 of this section.**
B.6.3	B.6.3 Additional classification considerations The flash point shall be determined in accordance with ASTM D56-05, ASTM D3278, ASTM D3828, ASTM D93-08 (incorporated by reference; See §1910.6), or any other method specified in **~~GHS Revision 3, Chapter 2.6.~~** The initial boiling point shall be determined in accordance with ASTM D86-07a or ASTM D1078 (incorporated by reference; See §1910.6).	B.6.3 Additional classification considerations The flash point shall be determined in accordance with ASTM D56-05, ASTM D3278, ASTM D3828, ASTM D93-08 (incorporated by reference, see §1910.6), or any method specified in **29 CFR 1910.106(a)(14)**. **It may also be determined by any other method specified in GHS Revision 7, Chapter 2.6.**The initial boiling point shall be determined in accordance with ASTM D86-07a or ASTM D1078 (incorporated by reference; see §1910.6)**[9]**.
B.6.3		**[9] To determine the appropriate flammable liquid storage container size and type, the boiling point shall be determined by § 1910.106(a)(5). In addition, the manufacturer, importer, and distributor shall clearly note in sections 7 and 9 of the SDS if an alternate calculation was used for storage purposes and the classification for storage differs from the classification listed in Section 2 of the SDS.**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current **Removed text is bold, underlined with a strike though**	NEW **New text is bold and underlined**
B.7.2.1	B.7.2.1 Powdered, granular or pasty chemicals shall be classified as flammable solids when the time of burning of one or more of the test runs, performed in accordance with the test method described in **~~the UN ST/SG/AC.10 (incorporated by reference; See §1910.6)~~**, Part III, subsection 33.2.1, is less than 45 s or the rate of burning is more than 2.2 mm/s (0.0866 in/s).	B.7.2.1 Powdered, granular or pasty chemicals shall be classified as flammable solids when the time of burning of one or more of the test runs, performed in accordance with the test method described in Part III, subsection 33.2.1 of **UN ST/SG/AC.10 (incorporated by reference; see §1910.6),** is less than 45 s or the rate of burning is more than 2.2 mm/s (0.0866 in/s).
NOTE	NOTE: Classification of solid chemicals shall be based on tests performed on the chemical as presented. If, for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, classification must be based on testing of the chemical in the new form.	NOTE 1: Classification of solid chemicals shall be based on tests performed on the chemical as presented. If, for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, classification must be based on testing of the chemical in the new form. **NOTE 2: Aerosols should not be classified as flammable solids. See Appendix B.3.**
Table B.11.1 NOTE		**Table B.11.1 NOTE: Classification of solid chemicals shall be based on tests performed on the chemical as presented. If, for example, for the purposes of supply or transport, the same chemical is to be presented in a physical form different from that which was tested and which is considered likely to materially alter its performance in a classification test, classification must be based on testing of the chemical in the new form**
B.14.2	B.14.2 Classification criteria An oxidizing solid shall be classified in one of the three categories for this class using test O.1 in Part III, sub-section 34.4.1 of the UN ST/SG/AC.10 (incorporated by reference; See §1910.6), in accordance with Table B.14.1:	B.14.2 Classification criteria An oxidizing solid shall be classified in one of the three categories for this class using test O.1 in Part III, sub-section 34.4.1, of UN ST/SG/AC.10 (incorporated by reference, see §1910.6) **or test O.3 in Part III, sub-section 34.4.3 of UN ST/SG/AC.10/11 (incorporated by reference, see §1910.6),** in accordance with Table B.14.1:
Table B.14.1	**Table B.14.1: Criteria for oxidizing solids**	Table B.14.1: Criteria for oxidizing solids (update table and notes)

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
NOTE 1	NOTE 1: Some oxidizing solids may present explosion hazards under certain conditions (e.g., when stored in large quantities). For example, some types of ammonium nitrate may give rise to an explosion hazard under extreme conditions and the "Resistance to detonation test" **(IMO: Code of Safe Practice for Solid Bulk Cargoes, 2005, Annex 3, Test 5)** may be used to assess this hazard. When information indicates that an oxidizing solid may present an explosion hazard, it shall be indicated on the Safety Data Sheet.	NOTE 1: Some oxidizing solids may present explosion hazards under certain conditions (e.g., when stored in large quantities). For example, some types of ammonium nitrate may give rise to an explosion hazard under extreme conditions and the "Resistance to detonation test" (International Maritime Solid Bulk Cargoes Code, IMO (IMSBC), Appendix 2, Section 5) may be used to assess this hazard. When information indicates that an oxidizing solid may present an explosion hazard, it shall be indicated on the Safety Data Sheet.
B.17		**B.17 DESENSITIZED EXPLOSIVES**
B.17.1		**B.17.1 Definitions and general considerations** **Desensitized explosives are solid or liquid explosive chemicals which are phlegmatized10 to suppress their explosive properties in such a manner that they do not mass explode and do not burn too rapidly and therefore may be exempted from the hazard class "Explosives" (Chapter B.1; see also Note 2 of paragraph B.1.3).11**
B.17.1.1		**B.17.1.1 The class of desensitized explosives comprises:** **(a) Solid desensitized explosives: explosive substances or mixtures which are wetted with water or alcohols or are diluted with other substances, to form a homogeneous solid mixture to suppress their explosive properties.** **NOTE: This includes desensitization achieved by formation of hydrates of the substances.** **(b) Liquid desensitized explosives: explosive substances or mixtures which are dissolved or suspended in water or other liquid substances, to form a homogeneous liquid mixture to suppress their explosive properties**
B.17.2		**B.17.2 Classification criteria**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.17.2.1		**B.17.2.1 Any explosive which is desensitized shall be considered in this class, unless:** **(a) It is intended to produce a practical, explosive or pyrotechnic effect; or It has a mass explosion hazard according to test series 6 (a) or 6 (b) or its corrected burning rate according to the burning rate test described in part V, subsection 51.4 of UNST/SG/AC.10/11/Rev.6 (incorporated by reference, see §1910.6) is greater than 1200 kg/min;or** **(b) Its exothermic decomposition energy is less than 300 J/g.**
10 (B.17.2.1)		**10 Phlegmatized means that a substance (or "phlegmatizer") has been added to an explosive to enhance its safety in handling and transport. The phlegmatizer renders the explosive insensitive, or less sensitive, to the following actions:** **heat, shock, impact, percussion or friction. Typical phlegmatizing agents include, but are not limited to: wax, paper, water, polymers (such as chlorofluoropolymers), alcohol and oils (such as petroleum jelly and paraffin)**
11 (B.17.2.1)		**11 Unstable explosives as defined in Chapter B.1 can also be stabilized by desensitization and consequently may be reclassified as desensitized explosives, provided all criteria of Chapter B.17 are met. In this case, the desensitized explosive should be tested according to Test Series 3 (Part I of UN ST/SG/AC.10/11/Rev. 6 (incorporated by reference, see §1910.6)) because information about its sensitiveness to mechanical stimuli is likely to be important for determining conditions for safe handling and use. The results shall be communicated on the safety data sheet.**
NOTE 1		**NOTE 1: Substances or mixtures which meet the criterion (a) or (b) shall be classified as explosives (see Chapter B.1). Substances or mixtures which meet the criterion (c) may fall within the scope of other physical hazard classes.**
NOTE 2		**NOTE 2: The exothermic decomposition energy may be estimated using a suitable calorimetric technique (see section 20, sub-section 20.3.3.3 in Part II of UN ST/SG/AC.10/11/Rev.6(incorporated by reference, see §1910.6).**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.17.2.2		**B.17.2.2 Desensitized explosives shall be classified in one of the four categories of this class depending on the corrected burning rate (Ac) using the test "burning rate test (external fire)" described in Part V, sub-section 51.4 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference, see §1910.6), according to Table B.17.1:**
Table B.17.1		**Table B.17.1: Criteria for desensitized explosives (insert table and notes)**
NOTE 1		**NOTE 1: Desensitized explosives shall be prepared so that they remain homogeneous and do not separate during normal storage and handling, particularly if desensitized by wetting. The manufacturer, importer, or distributor shall provide information in Section 10 of the safety data sheet about the shelf-life and instructions on verifying desensitization. Under certain conditions the content of desensitizing agent (e.g.,phlegmatizer, wetting agent or treatment) may decrease during supply and use, and thus, the hazard potential of the desensitized explosive may increase. In addition, Sections 5 and/or 8 of the safety data sheet shall include advice on avoiding increased fire, blast or protection hazards when the chemical is not sufficiently desensitized.**
NOTE 2		**NOTE 2: Explosive properties of desensitized explosives shall be determined using data from Test Series 2 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference, see §1910.6) and shall be communicated in the safety data sheet. For testing of liquid desensitized explosives, refer to section 32, sub-section 32.3.2 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference, see 1910.6). Testing of solid desensitized explosives is addressed in section 33, sub-section 33.2.3 of UN ST/SG/AC.10/11/Rev.6 (incorporated by reference, see §1910.6).**
NOTE 3		**NOTE 3: Desensitized explosives do not fall additionally within the scope of chapters B.1 (explosives), B.6 (flammable liquids) and B.7 (flammable solids)**
B.17.3		**B.17.3 Additional classification considerations**

1910.1200	Hazard Communication	DRAFT 6/15/2024
Appendix B		

Number	Current Removed text is bold, underlined with a strike though	NEW New text is bold and underlined
B.17.3.1		**B.17.3.1 The classification procedure for desensitized explosives does not apply if:** **(a) The substances or mixtures contain no explosives according to the criteria in Chapter B.1; or** **(b) The exothermic decomposition energy is less than 300 J/g.**
B.17.3.2		**B.17.3.2 The exothermic decomposition energy shall be determined using the explosive already desensitized (i.e., the homogenous solid or liquids mixture formed by the explosive and the substance(s) used to suppress its explosive properties). The exothermic decomposition energy may be estimated using a suitable calorimetric technique (see Section 20, sub-section 20.3.3.3 in Part II of UN ST/SG/AC.10/11/Rev. 6 (incorporated by reference, see §1910.6).**