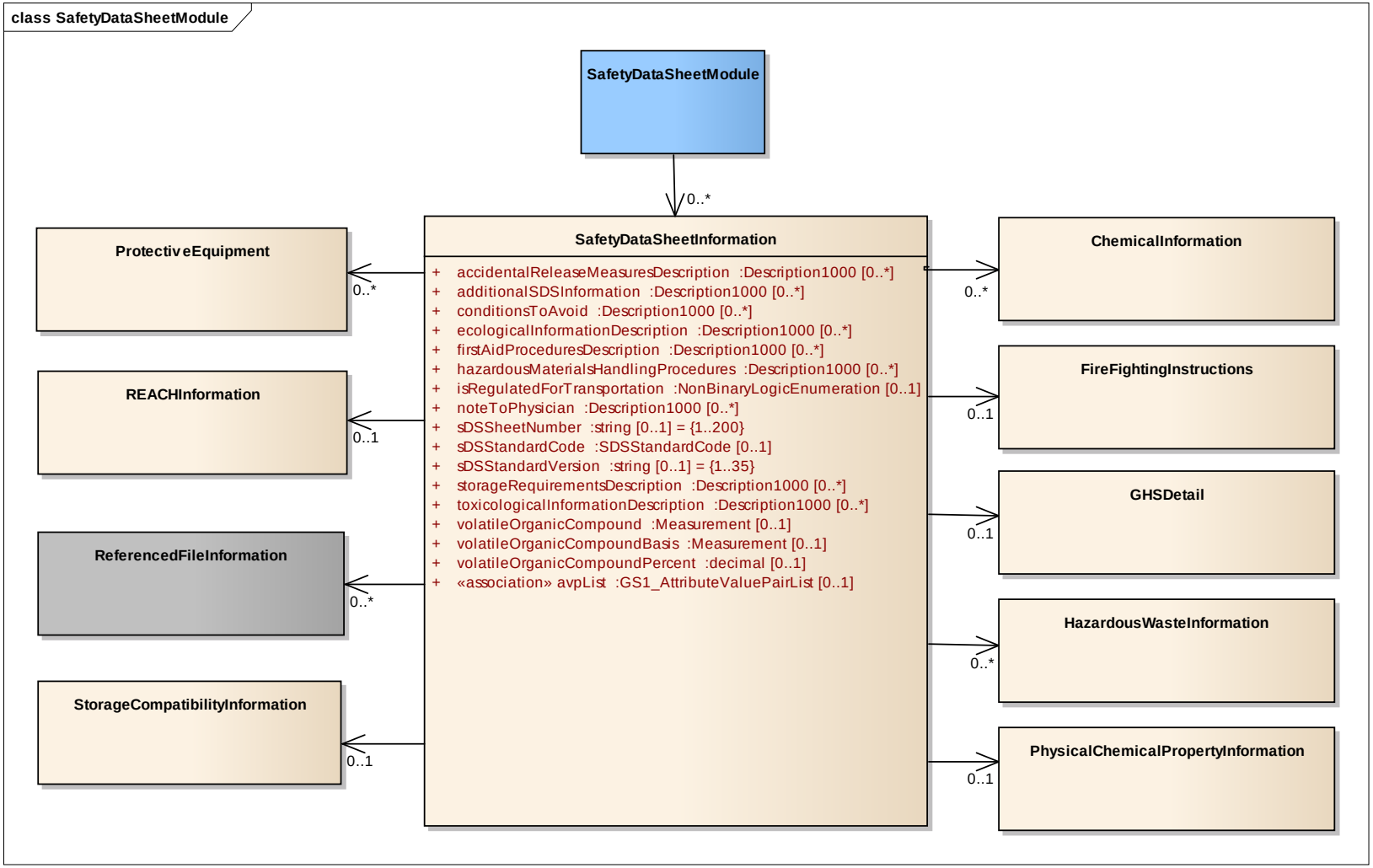
5.50. Safety Data Sheet Module



Note: Common class (in grey) is located in the GDSN Common Library.

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content	attribute / role	datatype /secondary class	multiplicity	definition
SafetyDataSheetModule				A module containing information usually contained on a safety data sheet or on a material safety data sheet as it is referred to in some target markets.
Association		SafetyDataSheetInformation	0..*	Trade item information usually contained on a safety data sheet or on a material safety data sheet as it is referred to in some target markets.
SafetyDataSheetInformation				Trade item information usually contained on a safety data sheet or on a material safety data sheet as it is referred to in some target markets.
Association		PhysicalChemicalPropertyInformation	0..1	Physical or chemical property information expressed on an SDS/MSDS.
Association		ChemicalInformation	0..*	Chemical Information expressed on an SDS/MSDS.
Association		GHSDetail	0..1	Information on GHS for a safety data sheet.
Association		HazardousWasteInformation	0..*	Hazardous waste information expressed on an SDS/MSDS.
Association		REACHInformation	0..1	REACH information expressed on an SDS/MSDS.
Association		ProtectiveEquipment	0..*	Protective equipment recommended for a chemical.
Association		ReferrencedFileInformation	0..*	Referenced File information for an SDS/MSDS.
Association		StorageCompatibilityInformation	0..1	Storage compatibility information expressed on an SDS/MSDS.
Association		FireFightingInstructions	0..1	Fire fighting information expressed on an SDS/MSDS.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.
Attribute	accidentalReleaseMeasuresDescription	Description1000	0..*	A description of the method of clean-up or pick up for example Chemtrack number in relation to any hazardous materials regulated by ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).

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content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	additionalSDSInformation	Description1000	0..*	A description field for other information regarding the MSDS that is not in the other sections. For example, additional contact information, or sustainability statement, other information.
Attribute	conditionsToAvoid	Description1000	0..*	Conditions, environments, or other chemicals that when mixed with a product can cause an adverse reaction. For example exposing acids to bases.
Attribute	ecologicalInformationDescription	Description1000	0..*	Any information required on the SDS/MSDS in relationship to any effect of the chemical on the environment.
Attribute	firstAidProceduresDescription	Description1000	0..*	A description of any first aid procedures necessary in case of exposure. Note: This is used in compliance with ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).
Attribute	hazardousMaterialsHandlingProcedures	Description1000	0..*	Hazardous materials handling procedures are a description of how the product should be handled in relation to potential hazardous materials for example “do not handle around food, avoid contact with eyes, keep container closed.
Attribute	isRegulatedForTransportation	NonBinaryLogicEnumeration	0..1	An indicator whether the Trade Item is regulated for shipment by any agency.
Attribute	noteToPhysician	Description1000	0..*	A description of any measures a physician should take to treat patient for exposure for example "exposure may cause cardio irritability and what drugs not to be given in relation to any hazardous materials. This requested for hazardous materials regulated by ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).
Attribute	sDSSheetNumber	string	0..1	Manufacturer's identification number for the safety data sheet for a trade item.
Attribute	sDSStandardCode	SDSStandardCode	0..1	A code describing the standard used to create the MSDS that is pointed to in the SDS URL.
Attribute	sDSStandardVersion	string	0..1	The version of the standard used to create the MSDS that is pointed to in the SDS URL.
Attribute	storageRequirementsDescription	Description1000	0..*	A description how to safely store the Trade Item for example cool, dry, not near flame, adequate ventilation.
Attribute	toxicologicalInformationDescription	Description1000	0..*	A general description of any information on any toxic properties as included on the MSDS for example precautionary text on a label. This text should describe the key issues with the product in regards to toxicity.

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content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	volatileOrganicCompound	Measurement	0..1	Volatile Organic Compound is the amount of an item that is a volatile organic compound expressed as a measurement. Volatile is where the compound can evaporate or vaporize into the atmosphere.
Attribute	volatileOrganicCompoundBasis	Measurement	0..1	The basis measurement for a Volatile Organic Compound when expressed as an amount for example 1 L in the case of 5 ML per 1 LT.
Attribute	volatileOrganicCompoundPercent	decimal	0..1	Volatile Organic Compound by weight is the percentage of an item that is a volatile organic compound. Volatile is where the compound can evaporate or vaporize into the atmosphere.

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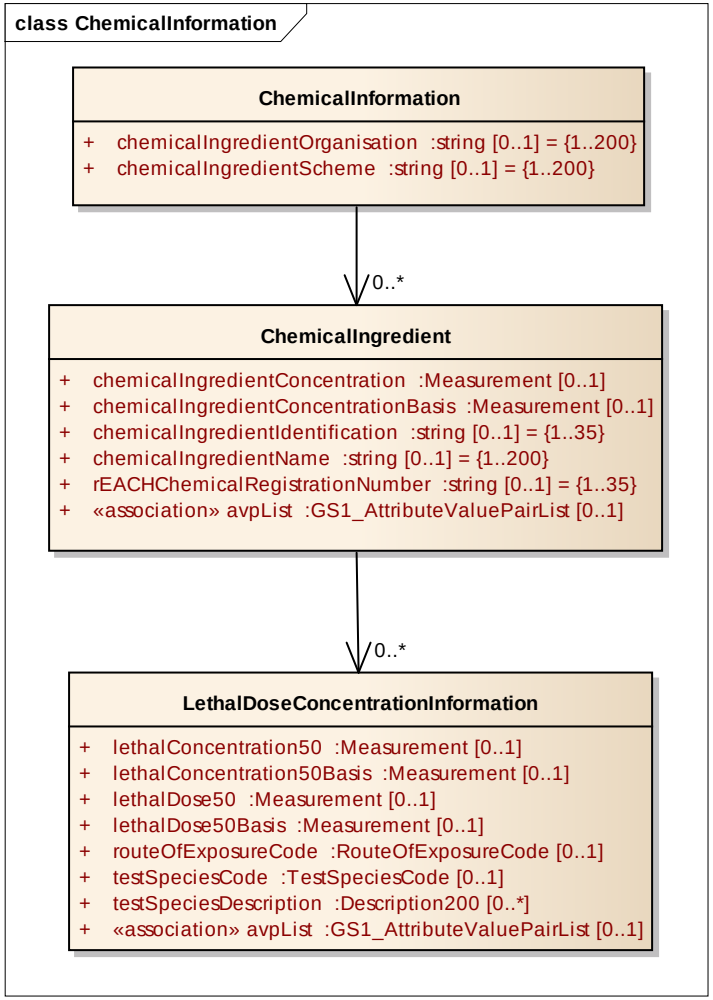

content	attribute / role	datatype /secondary class	multiplicity	definition
ChemicalInformation				Detailed information on any chemical ingredients contained within the trade item.
Association		ChemicalIngredient	0..*	Chemical ingredient details for a specific chemical ingredient.

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content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	chemicalIngredientOrganisation	string	0..1	An organization managing a chemical ingredient identification scheme.
Attribute	chemicalIngredientScheme	string	0..1	A managed list of chemical ingredient identifications for example CAS.
ChemicalIngredient				Chemical ingredient details for a specific chemical ingredient.
Association		LethalDoseConcentrationInformation	0..*	Lethal Dose and lethal concentration details for a chemical ingredient.
Attribute	chemicalIngredientConcentration	Measurement	0..1	The percentage of a chemical ingredient in relation to the total composition of the product.
Attribute	chemicalIngredientConcentrationBasis	Measurement	0..1	The basis amount used to express the chemical ingredient concentration.
Attribute	chemicalIngredientIdentification	string	0..1	A unique number to identify a chemical used to cross reference regulated lists of chemicals for example CAS number.
Attribute	chemicalIngredientName	string	0..1	The common name of the chemical ingredient.
Attribute	rEACHChemicalRegistrationNumber	string	0..1	A unique registration number for a chemical for a company. This is issued by the European Chemical Agency (ECHA) and is unique per chemical.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.
LethalDoseConcentrationInformation				Details on any lethal dose or concentration of a chemical in a trade item.
Attribute	lethalConcentration50	Measurement	0..1	Median Lethal Concentration is a statistically derived concentration of a substance that can be expected to cause death in 50% of test animals. It is usually expressed as the weight of substance per weight or volume of water, air or feed, e.g., mg/l, mg/kg or ppm.
Attribute	lethalConcentration50Basis	Measurement	0..1	The basis measurement for the measurement of Median Lethal Concentration for example 1 LT in the ratio 10 MG/1 LT .

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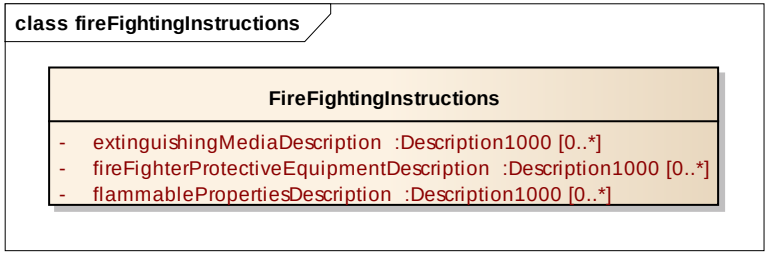
content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	lethalDose50	Measurement	0..1	Lethal Dose 50 is a statistically derived single dose that can be expected to cause death in 50% of the test animals when administered by the route indicated (oral, dermal, inhalation). It is expressed as a weight of substance per unit weight of animal, e.g., mg/kg.
Attribute	lethalDose50Basis	Measurement	0..1	The basis measurement for the measurement of a Lethal Dose for example 1 LT in the ratio 10 MG/1 LT.
Attribute	routeOfExposureCode	RouteOfExposureCode	0..1	The means by which living organisms can come into contact with a hazardous substance for example dermal, Inhalation, ingestion.
Attribute	testSpeciesCode	TestSpeciesCode	0..1	The species of animal that was used for determining LC and LD 50 expressed as a code for example RAT.
Attribute	testSpeciesDescription	Description200	0..*	A description of any species of animal that was used for determining LC and LD other than the norm.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.



content	attribute / role	datatype /secondary class	multiplicity	definition
FireFightingInstructions				Any instructions on how to handle a fire related to a specific trade item.

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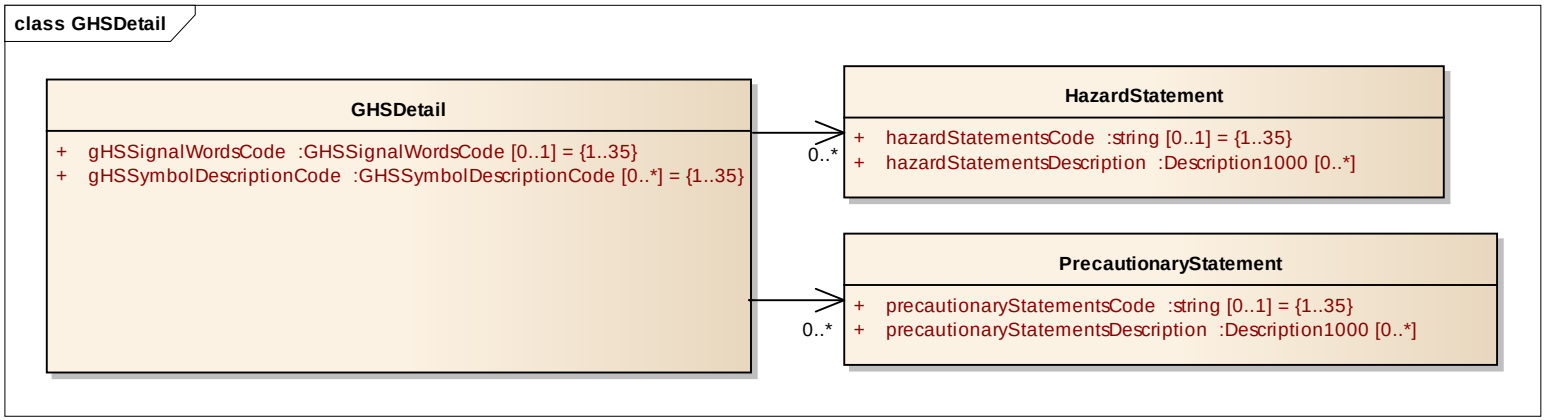
content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	extinguishingMediaDescription	Description1000	0..*	A description of any substance that can be used to extinguish a fire, carbon dioxide, water etc in relation to any hazardous materials for example those regulated by ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road). Allows for the representation of the same value in different languages but not multiple values.
Attribute	fireFighterProtectiveEquipmentDescription	Description1000	0..*	A description of any equipment recommended to be used by fire fighters for protection for example scuba gear, bunker gear, protective equipment in relation to any hazardous materials for example those regulated by ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road). Allows for the representation of the same value in different languages but not multiple values.
Attribute	flammablePropertiesDescription	Description1000	0..*	A description of any properties related to the ability of a substance to catch fire for example auto-ignition temperature, flashpoint, LEL, UEL in relation to any hazardous materials for example those regulated by ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).



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content	attribute / role	datatype /secondary class	multiplicity	definition
GHSDetail				Details related to the Globally Harmonized System of Classification and Labelling of Chemicals.
Association		HazardStatement	0..*	Standard phrases describing the nature of a hazard per GHS. Recommend to use GHS Fifth Revised Edition.
Association		PrecautionaryStatement	0..*	Measures listed on a hazardous label to minimize or prevent adverse effects related to GHS. Recommend to use GHS Fifth Revised Edition.
Attribute	gHSSignalWordsCode	GHSSignalWordsCode	0..1	Words such as "Danger" or "Warning" used to emphasize hazards and indicate the relative level of severity of the hazard. For GHS these are assigned to a GHS hazard class and category. Some lower level hazard categories do not use signal words.
Attribute	gHSSymbolDescriptionCode	GHSSymbolDescriptionCode	0..*	A code depicting the symbols which convey health, physical and environmental hazard information, assigned to a hazard class and category for example GHS. Pictograms include the harmonized hazard symbols plus other graphic elements, such as borders, background patterns or colours that are intended to convey specific information. Examples of all the pictograms and downloadable files for GHS can be accessed on the UN website for the GHS.
HazardStatement				Standard phrases describing the nature of a hazard per GHS.
Attribute	hazardStatementsCode	string	0..1	Standard phrases assigned to a hazard class and category that describe the nature of the hazard for example H200.
Attribute	hazardStatementsDescription	Description1000	0..*	A description of standard phrases assigned to a hazard class and category that describe the nature of the hazard.
Precautionary Statement				Measures listed on a hazardous label to minimize or prevent adverse effects related to GHS.
Attribute	precautionaryStatementsCode	string	0..1	Measures listed on a hazardous label to minimize or prevent adverse effects. For GHS, the precautionary statements have been linked to each GHS hazard statement and type of hazard. Precautionary statements for GHS cover prevention, response in cases of accidental spillage or exposure, storage, and disposal..
Attribute	precautionaryStatementsDescription	Description1000	0..*	A description of the measures listed on a hazardous label to minimize or prevent adverse effects.

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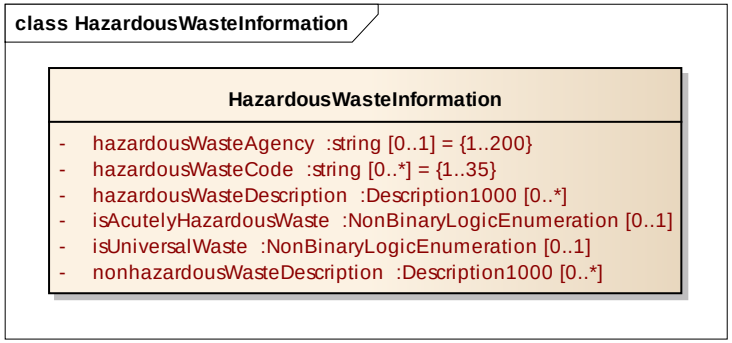

content	attribute / role	datatype /secondary class	multiplicity	definition
HazardousWasteInformation				Information on the hazardous waste classification for a trade item.
Attribute	hazardousWasteAgency	string	0..1	The Agency for the Classification of Hazardous Waste. The specific hazardous waste code for the federal or state regulation that applies to the product for example US EPA.
Attribute	hazardousWasteCode	string	0..*	A classification of hazardous waste managed at the federal or state level for example EPA Hazardous Waste Code of D001 (Ignitable waste).
Attribute	hazardousWasteDescription	Description1000	0..*	A description of the classification of hazardous waste managed at the federal or state level for example EPA Hazardous Waste Code of D001 (Ignitable waste).
Attribute	isAcutelyHazardousWaste	NonBinaryLogicEnumeration	0..1	An indicator whether or not the Trade Item contains wastes that would cause death, disabling personal injury, or serious illness. These wastes are more hazardous than ordinary hazardous wastes.
Attribute	isUniversalWaste	NonBinaryLogicEnumeration	0..1	Indicates if a product can be considered universal waste. Universal waste is defined as "are wastes that do not meet the regulatory definition of hazardous waste, but are managed under special, tailored regulations"
Attribute	nonHazardousWasteDescription	Description1000	0..*	A classification of non-hazardous waste managed at the federal or state level for example a code for disposal of latex paint.

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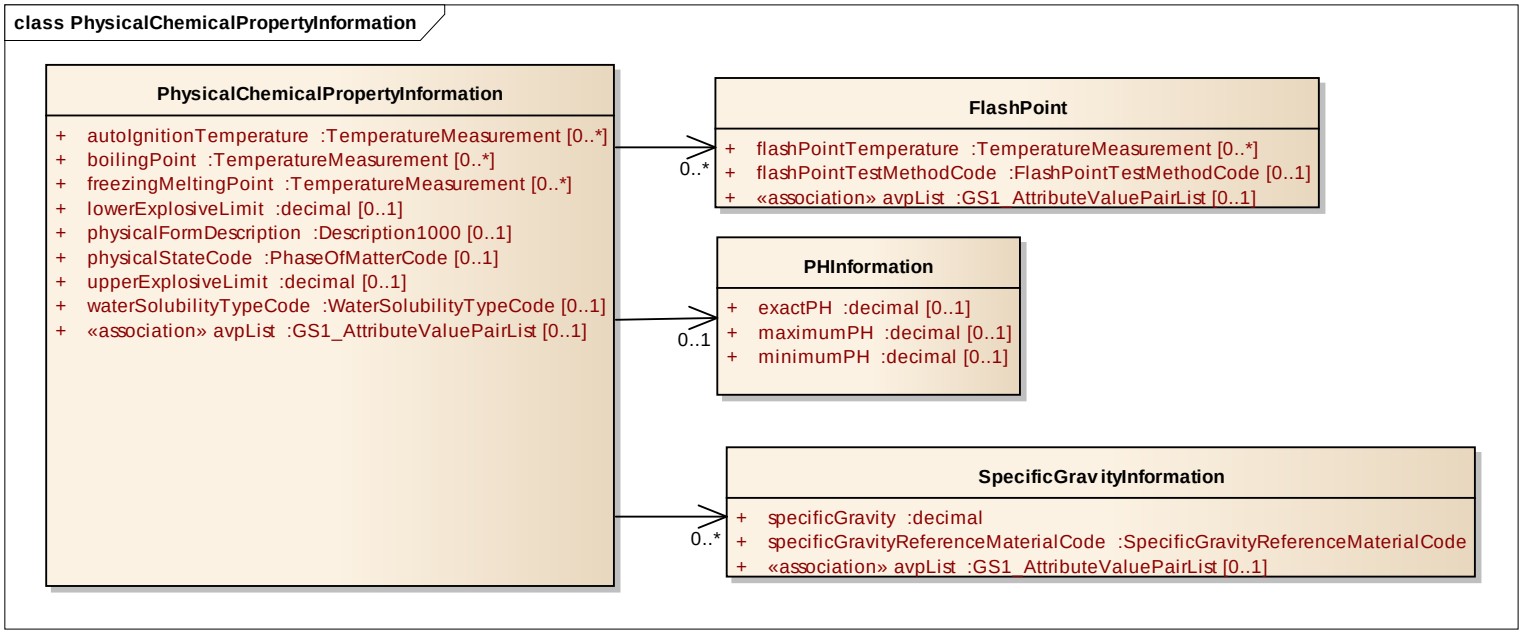

content	attribute / role	datatype /secondary class	multiplicity	definition
PHInformation				PH is defined as the acidity or alkalinity of an aqueous solution. It is defined as the logarithm of the reciprocal of the hydrogenion concentration of a solution. pH= log10 1/[H+].
Attribute	exactPH	Decimal	0..1	The exact PH amount for a chemical ingredient (not a range).
Attribute	maximumPH	Decimal	0..1	The maximum range for PH.
Attribute	minimumPH	Decimal	0..1	The minimum range value for PH.
PhysicalChemicalPropertyInformation				Information on Physical or Chemical Properties for a trade item for example water solubility.
Association		PHInformation	0..1	PH is defined as the acidity or alkalinity of an aqueous solution. It is defined as the logarithm of the reciprocal of the hydrogenion concentration of a solution. pH= log10 1/[H+].
Association		Flashpoint	0..*	Details on the flash point for a trade item.

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content	attribute / role	datatype /secondary class	multiplicity	definition
Association		SpecificGravityInformation	0..*	Specific Gravity Information for a trade item.
Attribute	autoIgnitionTemperature	TemperatureMeasurement	0..*	The lowest temperature at which it will spontaneously ignite in a normal atmosphere without an external source of ignition
Attribute	boilingPoint	TemperatureMeasurement	0..*	The temperature of a liquid at which its vapour pressure is equal to or very slightly greater than the atmospheric pressure of the environment. Note: (For water at sea level it is 100°C (212°F).
Attribute	freezingMeltingPoint	TemperatureMeasurement	0..*	The temperature at which its crystals are in equilibrium with the liquid phase at atmospheric pressure.
Attribute	lowerExplosiveLimit	Decimal	0..1	The low end value expressed as a percent by volume that the mixture is still flammable.
Attribute	physicalFormDescription	Description1000	0..1	A description of the form of the product for example gas, liquid, powder. Colorless, Fragrant, Liquid in relation to any hazardous materials.
Attribute	physicalStateCode	PhaseOfMatterCode	0..1	Any physical state a chemical ingredient may be in for example LIQUID.
Attribute	upperExplosiveLimit	Decimal	0..1	The high end value expressed as a percent by volume that the product will still explode.
Attribute	waterSolubilityTypeCode	WaterSolubilityTypeCode	0..1	Water solubility is defined as a code indicating solubility in respect to water. Solubility is the ability of a given substance to dissolve in a solvent.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.
FlashPoint				Details on the lowest temperature at which a substance gives off a sufficient vapor to support combustion.
Attribute	flashPointTemperature	TemperatureMeasurement	0..*	The lowest temperature at which a substance gives off a sufficient vapor to support combustion. This uses a measurement consisting of a unit of measure and value.
Attribute	flashPointTestMethodCode	FlashPointTestMethodCode	0..1	The test method used to determine the flash point temperature for example closed cup.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.
SpecificGravityInformation				Specific Gravity is defined as the ratio of the density of a substance to the density of a reference substance. It is an abstract number that is unrelated to any units.

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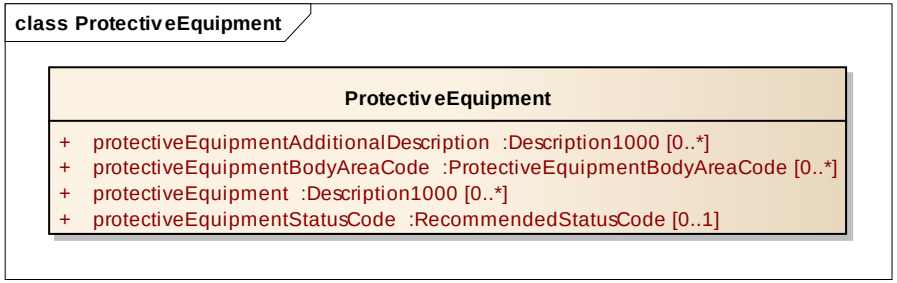
content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	specificGravity	Decimal	1..1	Specific Gravity is defined as the ratio of the density of a substance to the density of a reference substance expressed as a float. It is an abstract number that is unrelated to any units.
Attribute	specificGravityReferenceMaterialCode	SpecificGravityReferenceMaterialCode	1..1	The reference material used within the ratio for specific gravity for example water or air.
Association	avpList	GS1_AttributeValuePairList	0..1	Attribute value pair information.



content	attribute / role	datatype /secondary class	multiplicity	definition
ProtectiveEquipment				Information on any recommended protective equipment.
Attribute	protectiveEquipmentAdditionalDescription	Description1000	0..*	Additional information regarding when protective equipment is recommended or required.
Attribute	protectiveEquipment	Description1000	0..*	The manufacturer recommended protective equipment for example protective clothing, helmets, goggles, or other garment designed to protect the wearer's body from chemical exposure.
Attribute	protectiveEquipmentStatusCode	RecommendedStatusCode	0..1	A code determining whether the protective equipment is recommended or required.
Attribute	ProtectiveEquipmentBodyAreaCode	ProtectiveEquipmentBodyAreaCode	0..*	A code determining the part of the body the protective equipment is meant to protect for example EYE

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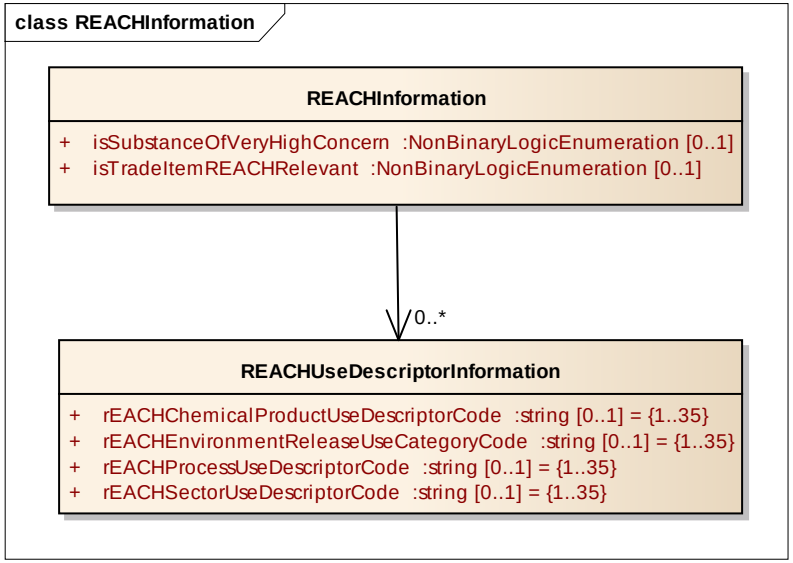

content	attribute / role	datatype /secondary class	multiplicity	definition
REACHInformation				Information on the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
Association		REACHUseDescriptorInformation	0..*	Details on the trade item in relation to REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals). REACH is a European Union Regulation addressing the production and use of chemical substances and their potential impacts on both human health and the environment.

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content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	isSubstanceOfVeryHighConcern	NonBinaryLogicEnumeration	0..1	An indicator that a trade item contains substances of very high concern (SVHC) according to REACH as defined in as defined in Article 57 of Regulation (EC) No 1907/2006. This indication does not mean the contained substance or substances have been added to the REACH Candidate List. Substances of very high concern (SVHC) are defined as: •Substances that are category 1 and 2 carcinogens, mutagens or toxic to the reproductive system (CMR) •Substances that are persistent, bio-accumulative and toxic (PBT) or very persistent and very bio-accumulative (vPvB) •Substances such as endocrine disrupters, which are demonstrated to be of equivalent concern. For these substances, there are specific requirements under the REACH Regulation.
Attribute	isTradeItemREACHRelevant	NonBinaryLogicEnumeration	0..1	An indicator that the trade item may have ingredients that subject it to REACH.
REACHUseDescriptorInformation				Details on the trade item in relation to REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals). REACH is a European Union Regulation addressing the production and use of chemical substances and their potential impacts on both human health and the environment.
Attribute	rEACHChemicalProductUseDescriptorCode	string	0..1	The types of preparations (mixtures) the substance is contained in end-use. An example of a Reach Chemical Product Descriptor is PC1: Adhesives, sealants.
Attribute	rEACHEnvironmentReleaseUseCategoryCode	string	0..1	The broad conditions of use from the environmental perspective. An example of a REACH Environment Release Category is ERC 3 Formulation in materials.
Attribute	rEACHProcessUseDescriptorCode	string	0..1	The technical process or application in which the substance is used from an occupational perspective. An example of a REACH Process Use Descriptor is PROC 7 Industrial Spraying.

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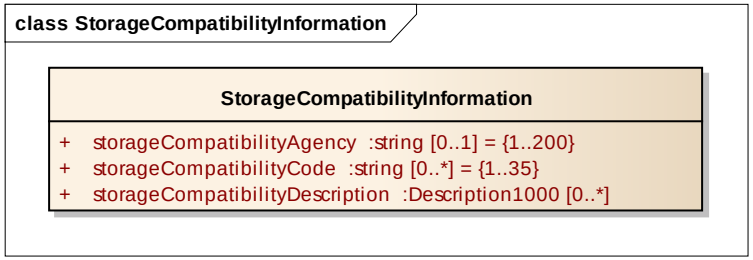
content	attribute / role	datatype /secondary class	multiplicity	definition
Attribute	rEACHSectorUseDescriptorCode	string	0..1	The sector of the economy the substance is used. Use includes manufacture in the chemical industry, mixing of substances at formulator's level as well as industrial, professional and consumer end-uses. An example of a REACH Sector Use Descriptor is SU4 Manufacture of food products.



content	attribute / role	datatype /secondary class	multiplicity	definition
StorageCompatibilityInformation				Information on the types of materials that this product cannot be stored with.
Attribute	storageCompatibilityAgency	string	0..1	The agency which maintains a list of storage compatibilities for example NFPA.
Attribute	storageCompatibilityCode	string	0..*	A storage compatibilities expressed as a code.
Attribute	storageCompatibilityDescription	Description1000	0..*	The types of materials that this product cannot be stored with. Incompatible chemicals give an undesired chemical reaction when mixed. This usually refers to substances that will react to cause an imminent threat to health and safety through an explosion, fire, and/or formation of toxic materials.

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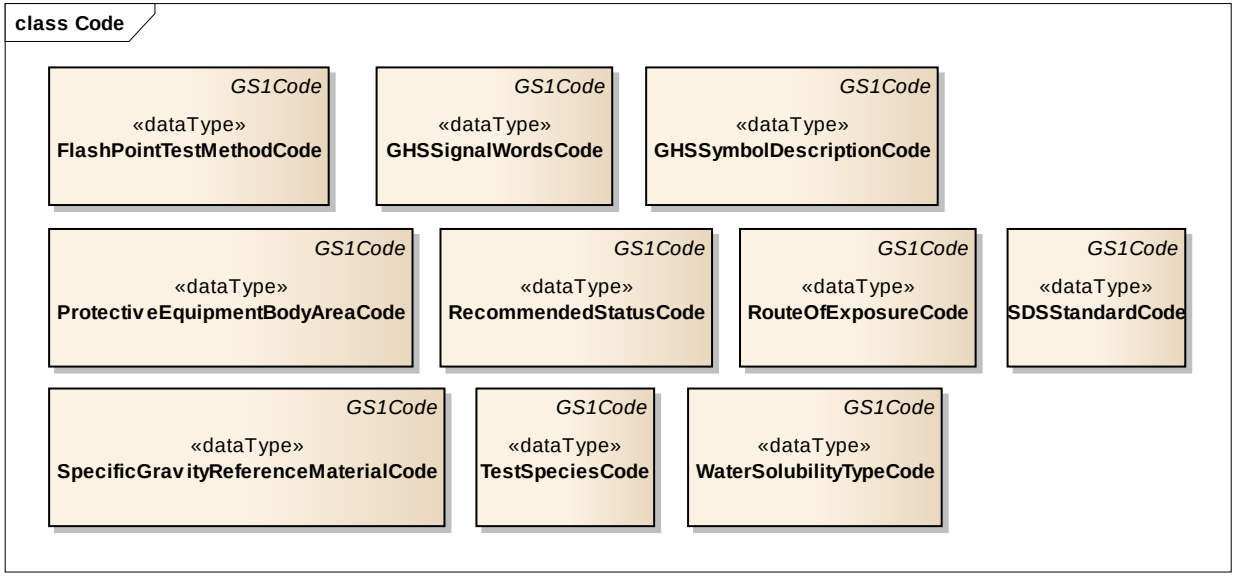

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