



Annex I to the IMDS001 Recommendation	IMDS 001a
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Annex I to the IMDS001 Recommendation**IMDS 001a****1 Material Classifications in IMDS****1.1 Selection of Material Classifications in IMDS**

The classification system for materials in MDSs is a mixture of composition (substances in the material), production [class. 1 – 4, 7], properties [class. 5] and application [class. 6, 8, 9] of the material. Materials should preferably be classified according to their composition and not to their application. Materials in electronic applications should be classified according to their composition (e.g. copper instead of electronics). Plastic materials should be firstly classified according to their properties. The classification should be as detailed as possible. For example, if possible, avoid classification 1.1 but use 1.1.1 or 1.1.2 instead.

In IMDS, it is expected that every homogeneous material has to be described as a separate material. “Homogeneous” means that there is a consistent material composition which cannot be separated mechanically into two or more different materials. “Mechanical separation” here means that it is generally possible to separate materials by means of cutting, trimming and abrasion. Homogeneous materials are for example plastics, metals, alloys and coatings.

Materials such as metals with a coating (example: plated galvanized steel or copper wire with PVC coating) or layered composition materials (example: copper overmolded with polymer) are most likely not homogeneous and each layer needs to be described as a separate material with appropriate classification of each material, e.g. classification 3.3 for zinc coating.

An elemental breakdown of the material is prohibited. Materials need to be reported as they appear on the vehicle. For example, if describing a polymer, you need to describe it in the cured state and not the processing chemicals. If you do include a gas, liquid, or processing chemical as a basic substance, you need to verify that they are still present in the final (hardened and dried up) part as supplied to the customer.

Many of the metal materials have been published in IMDS by the IMDS Committee. Before creating your own material in these classifications, please check if there is an appropriate material already published by the IMDS Committee. Please do not use materials published by other suppliers unless they are your supplier. In cases where there is an IMDS Committee material and a supplier material published for the same material, the IMDS Committee material should preferably be used. To find IMDS Committee materials, use the search function for materials and check “published MDSs” for origin to find these materials.

In the following sections, information on each classification and examples are included. Given thresholds reflect common concentrations which might deviate in special materials.

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Classification	Description	Example / Designation
0 Undefined	This classification cannot be used.	
1 Steel and iron materials	<p>This classification cannot be used.</p> <p>This category and sub categories represents materials where the main substance is iron e. g. steels, cast iron and sintered metals.</p> <p>Sintered materials with metal oxides and metals do not fit in this category (for example ceramic magnets).</p> <p>Materials published by IMDS Steering Committee should be used preferably.</p>	
1.1 Steels / cast steel / sintered steel	<p>Although a selectable classification, it should only be used when classifications 1.1.1 or 1.1.2 are not appropriate.</p> <p>Sintered metals (compression and hardening with means of heat below melting temperature) could be classified as 1.1 if classifications 1.1.1 or 1.1.2 are not appropriate.</p> <p>Sintering is the process of forming objects from a metal powder by heating the powder at a temperature below its melting point.</p> <p>In the production of small metal objects, it is often not practical to cast them. Through chemical or mechanical procedures a fine powder of the metal can be produced. When the powder is compacted into the desired shape and heated, i.e., sintered, for up to three hours, the particles composing the powder join together to form a single solid object.</p>	Sint-D01 P1011Z
1.1.1 Unalloyed, low alloyed	<p>This classification should be used for steels with a content of at least 95 % iron. Generally the content is above 98 %. Traces of carbon and silicon could be added.</p>	DC 01 SPCC



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Classification	Description	Example / Designation
1.1.2 Highly alloyed	<p>There are two definitions for highly alloyed steels.</p> <ol style="list-style-type: none">1. If the content of at least one alloying element is above 5 % you speak of highly alloyed steel.2. Highly alloyed steel consists of less than 95 % iron and more than 5 % further metallic alloying components. <p>It is recommended to use definition 2 for IMDS matters. All metallic alloying components should be taken into account.</p>	X30Cr13, S42000, SUS420
1.2 Cast iron	<p>Although a selectable classification, it should only be used when classifications 1.2.1, 1.2.2 or 1.2.3 are not appropriate.</p> <p>If there is more than 2 % carbon in an iron alloy it should be considered cast iron.</p>	
1.2.1 Cast iron with lamellar graphite / tempered cast iron	Lamellar graphite is composed of lamellae, a thin flat scale, membrane, or layer of graphite (carbon) as opposed to nodular, which is approximately spherical.	EN-GJL-100 FC100
1.2.2 Cast iron with nodular graphite / vermicular cast iron	Nodular graphite flakes are used in approximately spherical cast iron part.	EN-GJS-400-15 FCD400-15
1.2.3 Highly alloyed cast iron	<p>Highly alloyed cast iron consists of iron, 2 % or more of carbon and more than 5 % metallic alloying components (Carbon and silicon contents should not be taken into account).</p> <p>A commercial alloy of iron, with higher amounts of carbon, and silicon, etc., that is cast in a mould and is hard, brittle, non-malleable, and incapable of being hammer-welded, but more readily fusible than steel. Often used in high temperature application.</p>	EN-GJSA-XNiCr20-2 (Synonym: EN-JS 3011) FCDA-NiCr 20 2
2 Light alloys, cast and wrought alloys	<p>This classification cannot be used.</p> <p>Metals and metal alloys with a density of less than 5g/cm³ are called light metals.</p>	

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Classification	Description	Example / Designation
2.1 Aluminum and aluminum alloys	Although a selectable classification, it should only be used when classifications 2.1.1 or 2.1.2 cannot be used.	
2.1.1 Cast aluminum alloys	Aluminum alloys produced by being poured into a mold while in liquid form.	EN AC-AlMg9 ADC5
2.1.2 Wrought aluminum alloys	Aluminum alloys fashioned or shaped to a desired form by a gradual process of cutting hammering, scraping, pressing or stretching.	EN AW-AlMg1,5 A5005
2.2 Magnesium and magnesium alloys	Although a selectable classification, it should only be used when classifications 2.2.1 or 2.2.2 cannot be used.	
2.2.1 Cast magnesium alloys	Magnesium alloys produced by being poured into a mould while in liquid form.	EN-MCMgAl5Mn MDC4
2.2.2 Wrought magnesium alloys	Magnesium alloys fashioned or shaped to a desired form by a gradual process of cutting, hammering, scraping, pressing or stretching	Class 2 (Synonym: MGA2)
2.3 Titanium and titanium alloys		Titanium unalloyed (Grade 3) TTH480
3 Heavy metals, cast and wrought alloys	This classification cannot be used. Heavy metals are basically referring to any metal or alloy with a density > 5 g/cm ³ especially applicable for the metals named below.	
3.1 Copper (e.g. copper amounts in cable harnesses)	Pure copper with a content of more than 99 %.	Copper (Controlled Oxygen) C1100
3.2 Copper alloys	Copper fused with smaller amounts of other metals.	CuAl5As BCuP-5
3.3 Zinc alloys	Means Zinc or Zinc alloys. As well electroplated Zinc layers should be classified 3.3.	Zinc (Type II, anodes), passivations: zinc-nickel, zinc-iron, zinc chromate Zn99.95

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Classification	Description	Example / Designation
3.4 Nickel alloys	Means Nickel or Nickel alloys	Nickel Alloy (ACI CZ-100) NW2200
3.5 Lead	<p>The classification lead should only be used when there is almost 100% lead in a material for example in accumulators or electrodeposited lead coatings.</p> <p>It can also be used in solders with more than 80 % lead content. Tin-solder with 36 % lead should not be classified as lead (see 4.2).</p>	Lead in batteries PEPb-1
4 Special metals	This classification cannot be used.	
4.1 Platinum / Rhodium	Platinum and Rhodium metal or alloys which are e.g. used in noble metal catalyzers should be classified as 4.1.	Refined platinum (99.95) Pt
4.2 Other special metals	This category should be chosen for all elemental metals which cannot be classified in the other classifications. Metal oxides should not be classified in this category and you will get a warning.	Gold (Au), silver (Ag), tungsten (VWV1C), silicon metalloid (Msi 1), solders, tin (Sn), semi-conductors (semicon) like Si/GaAs-wafers
5 Polymer materials	This classification cannot be used.	



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Classification	Description	Example / Designation		
5.1 Thermoplastics	<p>This classification is a summary classification. Materials matching this high-level classification should be further characterized to differentiate between 5.1.a and 5.1.b, as detailed below.</p> <p>Thermoplastics are plastic materials which could be deformed when heated. This procedure is reversible. That means it could be repeated by heating up to a liquid state and cooling down again as often as required.</p>	ABAK	PBAK	POB
		ABS	PBT	POM
		ACS	PC	Polyether
		AEPDS	PCTA	PP
		AES	PCTFE	PPA
		AMMA	PDCPD	PPE
		APAO	PE	PPOX
		ASA	PE-C	PPS
		EEAK	PE-HD	PPSU
		EMA	PE-LLD	PS
		ETFE	PE-LD	PSU
		EVAC	PE-LMD	PTFE
		EVOH	PE-MD	PPT
		FEP	PE-UHMW	PVAC
		LCP	PEBA	PVAL
		MBS	PEEK	PVC
		MMABS	PEKK	PVC-C
		PA6	PEEST	PVCAC
		PA66	PEI	PVDC
		PA66/6	PEK	PVDF
		PA46	PEKEKK	PVF
		PA69	PEKK	PVFM
		PA11	PEOX	PVK
		PA12	PES	PVP
		PA610	PET	SAN
		PA612	PFA	SMAH
		PA6T/ MPMDT	PFEP	SMS
		PAE	PFF	VCE
		PAEK	PIS	VCEMAK
		PAI	PIR	VCEVAC
		PAN	PK	VCKMAK
		PAR	PMI	VCMMA
		PARA	PMMA	VCOAK
		PAS	PMMI	VCVAC
		PAT	PMP	VCVDC
		PB	PMS	



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Classification	Description	Example / Designation																																																						
5.1.a Filled Thermoplastics	<p>Thermoplastic materials containing substances according to the definition in ISO 1043-2.</p> <p>Examples for fillers:</p> <table><tr><th>Symbol</th><th>Material</th><th>Form / Structure</th></tr><tr><td>BD</td><td>Boron</td><td>powder</td></tr><tr><td>CD</td><td>Carbon, Graphite</td><td>powder</td></tr><tr><td>CF</td><td>Carbon</td><td>fiber</td></tr><tr><td>DD</td><td>Alumina trihydrate</td><td>powder</td></tr><tr><td>ED</td><td>Clay</td><td>powder</td></tr><tr><td>GB</td><td>Glass</td><td>beads, spheres, balls</td></tr><tr><td>GF</td><td>Glass</td><td>fiber</td></tr><tr><td>GM</td><td>Glass</td><td>mat (thick)</td></tr><tr><td>GS</td><td>Glass</td><td>flake</td></tr><tr><td>KD</td><td>Calcium Carbonate</td><td>powder</td></tr><tr><td>MD</td><td>Mineral, Metal</td><td>powder</td></tr><tr><td>MF</td><td>Mineral, Metal</td><td>fiber</td></tr><tr><td>RF</td><td>Aramid</td><td>fiber</td></tr><tr><td>SD</td><td>Synthetic organic</td><td>powder</td></tr><tr><td>TD</td><td>Talcum</td><td>powder</td></tr><tr><td>WD</td><td>Wood</td><td>powder</td></tr><tr><td>WF</td><td>Wood</td><td>fiber</td></tr></table>	Symbol	Material	Form / Structure	BD	Boron	powder	CD	Carbon, Graphite	powder	CF	Carbon	fiber	DD	Alumina trihydrate	powder	ED	Clay	powder	GB	Glass	beads, spheres, balls	GF	Glass	fiber	GM	Glass	mat (thick)	GS	Glass	flake	KD	Calcium Carbonate	powder	MD	Mineral, Metal	powder	MF	Mineral, Metal	fiber	RF	Aramid	fiber	SD	Synthetic organic	powder	TD	Talcum	powder	WD	Wood	powder	WF	Wood	fiber	
Symbol	Material	Form / Structure																																																						
BD	Boron	powder																																																						
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CF	Carbon	fiber																																																						
DD	Alumina trihydrate	powder																																																						
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GB	Glass	beads, spheres, balls																																																						
GF	Glass	fiber																																																						
GM	Glass	mat (thick)																																																						
GS	Glass	flake																																																						
KD	Calcium Carbonate	powder																																																						
MD	Mineral, Metal	powder																																																						
MF	Mineral, Metal	fiber																																																						
RF	Aramid	fiber																																																						
SD	Synthetic organic	powder																																																						
TD	Talcum	powder																																																						
WD	Wood	powder																																																						
WF	Wood	fiber																																																						
5.1.b Unfilled Thermoplastics	Thermoplastic materials containing above named substances in trace amounts																																																							



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Classification	Description	Example / Designation	
5.2 Thermoplastic Elastomers	This classification includes plastic materials which act like elastomers at room temperature, but show thermoplastic characteristics when heated. Names and symbols have to be chosen from ISO 18064.	AEM+TPC-ET	TPS-SIS
		TPA-EE	TPU-ALES
		TPA-ES	TPU-ALET
		TPA-ET	TPU-ARCE
		TPC-EE	TPU-ARCL
		TPC-ES	TPU-AREE
		TPC-ET	TPU-ARES
		TPC-ET+AEM	TPU-ARET
		TPC-ET+EMAK	TPV-(ACM+PP)
		TPC-ET+PBT	TPV-(ENR+PP)
		TPC-ET+PBT-I	TPV-(EPDM+PE)
		TPC-ET-I	TPV-(EPDM+PP)
		TPO-(EPDM+PP)	TPV-(NBR+PP)
		TPS-SBS	TPV-(NR+PP)
		TPS-SEBS	TPZ-(NBR+PVC)
		TPS-SEPS	



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Classification	Description	Example / Designation				
5.3 Elastomers	Elastomers can be deformed by stressing and compression. They return to their original configuration after removing the stress. Names and symbols have to be chosen from ISO 1629.	Natural rubber (EPDM, NBR) silicone rubber				
		ABR	E-SBR	NIR		
		ACM	EU	NR		
		AEM	EU	OT		
		AFMU	EVM	PBR		
		ANM	FEPM	PE-Si		
		AU	FFKM	PMQ		
		BIIR	FKM	PSBR		
		BIMS	FMQ	PUR-Si		
		BR	FVMQ	PVMQ		
		BR-E	FZ	PZ		
		CIIR	GECO	SBR		
		CM	GPO	SEBS		
		CO	HNBR	SIBR		
		CR	IIR	SIS		
		CSM	IM	S-SBR		
		ECO	IR	VMQ		
		ENR	MQ	XBR		
		EOT	MSBR	XCR		
		EPDM	NBM	XNBR		
		EPM	NBR	XSBR		
		5.4 Duromers	Although a selectable classification, it should only be used when classifications 5.4.1, 5.4.2 or 5.4.3 are not appropriate. This includes materials, which cannot be deformed after the curing process, typically called thermosets.	CA	EP	PVE
				CAB	PUR	PDAP
				CABPMA	PVAC	PAK
				CAP	CF	PF
				CEF	CS	PI
				CF	CSF	PUR
CMC	EP			PVB		
CN	FF			UF		
CP	MC			UP		
CTA	MF					
EC	MPF					

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Classification	Description	Example / Designation
5.4.1 Polyurethane	Materials with polyols and isocyanates as precursor (process chemicals). The quality could be hard and brittle or soft and elastic depending on production process.	Polyurethane foam (soft – hard)
5.4.2 Unsaturated polyester	Polyester resins made of unsaturated and saturated dicarboxylic acids and diols.	UP resin
5.4.3 Other duromers	Other duromers that cannot be classified under 5.4.1 or 5.4.2.	Epoxy resin, melamine resin, phenolic resin
5.5 Polymeric compounds (e.g. inseparable laminated trim parts)	This classification cannot be used.	
5.5.1 Plastics (in polymeric compounds)	Although a selectable classification, it should only be used when classifications 5.1.a; 5.1.b; 5.2; 5.3; 5.4 or 5.4.1 are not appropriate.	Exemption: laminate of several different plastic materials
5.5.2 Textiles (in polymeric compounds)	Textiles are flexible materials consisting of a network of natural or artificial fibers. This includes fibers, yarns, cloth and knitted fabrics.	Aramid fibers, polyester fibers, polyacrylic fibers
6 Process polymers	This classification cannot be used. Process polymers are fluid substances which react, harden or dry to reach their final state. The original substances, or at least some of them, are not present in the final state. In IMDS, only the substances remaining on the car are declared. The solvents and monomers must not be declared.	
6.1 Lacquers	Any of various clear or colored synthetic organic coatings that typically dry to form a film by evaporation of the solvent. The substances must be given in their final cured state - dried and without solvents.	Lacquers, Colorant,, Paint, Topcoat, Powder Coatings

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Classification	Description	Example / Designation
6.2 Adhesives, sealants	<p>This includes materials being used as adhesives, bonding agents or adhesion promoter.</p> <p>The substances must be given in their final cured state - dried and without solvents.</p> <p>This classification also includes highly filled thermally or electrically conductive materials.</p> <p>This classification must not be used for solders or complete textile adhesives tapes which consist of several materials.</p>	Adhesives, hotmelt adhesives, adhesion promoters, glue, die attach adhesive
6.3 Underseal	<p>Materials used to protect underbody or junctions from corrosion, mainly consisting on a PVC basis. The substances must be given in their final cured state - dried and without solvents.</p> <p>This classification should not be used for anti-corrosion agents and waxes.</p>	Sealers
7 Other materials and material compounds (scope of mixture)	<p>This classification cannot be used.</p> <p>Materials other than metals, plastics and lacquers and do not fit into categories 8 or 9 below.</p>	
7.1 Modified organic natural materials (e.g. leather, wood, cardboard, cotton fleece)	<p>This classification includes materials deriving from organic natural materials which could be treated with a chemical or physical procedure (finishing) without changing quality and composition.</p> <p>This classification should not be used for natural rubber, latex, graphite, activated carbon and minerals.</p>	Leather, wood, particular boards, chipboards, fiberboards, paper, cardboard and cotton
7.2 Ceramics / glass	<p>This classification includes materials with a high content of Al_2O_3 or SiO_2 - mainly in a mixture with other metal oxides with ceramic or glass characteristics.</p> <p>There are also technical ceramics such as silicon carbides, boron nitride, etc...</p>	PCB Ceramics, Glass fibers, metal oxides, ferrites

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7.3 Other compounds (e.g. friction linings)	This classification should be used for all solid materials which do not fit into any other category.	Friction linings, minerals
8 Electronics / electrics	This classification cannot be used. Components which could be separated such as housings and covers must be declared as separate components.	
8.1 Electronics (e.g. pc boards, displays)	Materials used in electronic components of electric assemblies such as printed circuit boards and displays. This classification is generally used for small electronics component reporting. It is not to be used for entire assemblies. Metals used in PCB or electronics have to be identified by categories 1 to 4. Exemption according to REC019 for materials of small electronics components / electronics parts weighing less than 5g (annually reviewed): - may be reported using material class 8.1 - Standard Material Numbers, Symbols, and Norms/Standards can be simplified per Rec. IMDS 001 as shown in Section 4.4.2.E, 4.4.2F and 4.4.2I.	Materials for displays or electronic components where a allocation to any of the above named classifications is not definitely possible. Solders should be classified according to their composition.
8.2 Electrics	There is no considerably difference to classification 8.1. Please use classification 8.1	
9 Fuels and auxiliary means	This classification cannot be used. This classification includes materials that remain as a fluid or solid reactive substance in the vehicle as sold.	
9.1 Fuels	This includes materials, which are used as fuels such as petrol (gasoline), diesel and hydrogen.	
9.2 Lubricants	This includes all materials, that are used as lubricants.	Oils, greases, fats, waxes, MoS, synthetics, etc

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9.3 Brake fluid	This includes all materials that are used as brake fluid in braking systems.	Brake fluid of class DOT3
9.4 Coolant / other glycols	This includes all materials that are used as coolants in absorbers, oil coolers and cooling systems of electrical HV accumulators.	Ethylene glycol
9.5 Refrigerant	This includes all materials that are used as coolants in air conditions.	R134A, carbon dioxide
9.6 Washing water, battery acids	This includes water based material with additives to clean windows and headlights, as well as battery acids.	
9.7 Preservative	This includes materials that are used as corrosion protective agents on metal surfaces. The classification should not be used for zinc coatings, wax layers and underseals.	anticorrosion oil
9.8 Other fuels and auxiliary means	This classification is for all gases, fluid and solid materials that do not fit in any other specific classification (if not classified as 7.3)	Filling gases, ignitable compounds,

1.2 Special Materials

This section lists some special categories of materials and how they should be handled.

Magnetic materials:

- In a metallic magnet, the alloying elements must be listed. In the case of a metallic magnet, none of the basic substances should contain oxygen (be a metal oxide). The material classification should be selected based on material composition. Metallic magnets should be classified in one of the classifications in categories 1-4 that best fits the composition. For permanent magnets/magnetically hard materials, classification 4.2 is usually used (e.g. rare earth based alloys such as Sm-Co 5)
- If there is a ceramic magnet, the basic substances have to be given as metal oxides. The correct classification would then be 7.2 ceramics/glass.
- Metal oxides could also be used within a plastic matrix. In this case the classification 5.1a should be used for thermoplastic polymer matrix and 5.4.x for duromers.

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2 Examples

This section lists some examples.

2.1 Specific Requirements for Automotive Lubricants – Material Classification 9.2

Definition:

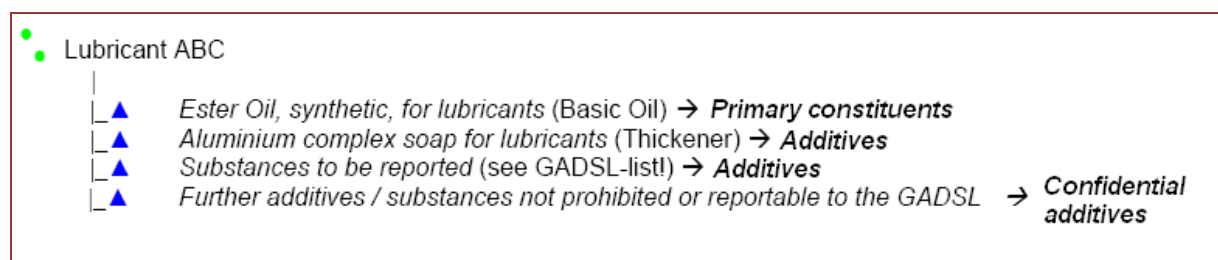
Automobile lubricants are products that are applied directly in the vehicle and remain throughout the *entire vehicle life cycle* (life-span of the lubricant) or *are replaced during the life cycle* by fresh oils/greases. These are not process lubricants like such as hydraulic oils for operating presses; heat transfer oils for operating hot-oil facilities; cooling lubricants for operating tools; corrosion protection oils which are not to be reported.

Structure:

The MDS representing the lubricant must be created:

- According to the final composition in the automobile (for example in the case of lubricant sprays, evaporated solvents are not to be included)
- According to Recommendation IMDS 001 rules and guidelines
- As material type MDS (not as components or semi-components), containing: basic substances, confidential substances and/or jokers / wildcards (highly confidential substances).
 - **Primary constituent:** present in the lubricant in high quantities; the primary constituents must be reported, irrelevant of their presence on the GADSL list (reportable substances).
 - **Additives:** present in the lubricant in smaller quantities; consist of at least one basic substance or a mix of primary constituents.
 - **Confidential additives:** are high confidential substances, which are not on the GADSL-list and where disclosure is not demanded (See definition of Jokers/Wildcards in Rec001).

The following figure represents a typical MDS structure for a lubricant (Material Classification 9.2):



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Primary Constituent – Oils:

For creation of automotive lubricants, there are five (5) primary constituent available in the category of “Basic Oils”. These substances do not contain any substance that is declarable on the GADSL. If your oils contain substances on the GADSL-list, the GADSL-substances have to be reported separately.

The following is a result of a substance search “basic oil” in the Name Field.

Search Criteria: Name=basic oil						
5 items found. Ordered ascending by "Name"						
No.	Name	CAS No.	EU-Index	Einecs-No.	Synonym	GAD...
1	Ester Oil, natural, for lubric...	-	-	-	Basic Oil: Est...	-
2	Ester Oil, synthetic, for lubri...	-	-	-	Basic Oil: Est...	-
3	Perfluorinated Polyetheroil...	-	-	-	Basic Oil: Per...	-
4	Polyalkylated Naphthalene f...	-	-	-	Basic Oil: Pol...	-
5	Silicon oil, for lubricants	-	-	-	Basic Oil: Sili...	-

Primary Constituent – Thickeners:

For creation of automotive lubricants, there are ten (10) primary constituent available in the category of “Thickener”. These substances do not contain any substance that is declarable on the GADSL. If your thickeners contain substances on the GADSL-list, the GADSL-substances have to be reported separately.

The following is a result of a substance search “thickener” in the Name Field.

Search Criteria: Name=thickener						
10 items found. Ordered ascending by "Name"						
No.	Name	CAS No.	EU-Index	Einecs-No.	Synonym	GAD...
1	Aluminium complex soap for...	-	-	-	Thickener: Al...	-
2	Aluminium soap for lubricants	-	-	-	Thickener: Al...	-
3	Barium complex soap, carb...	-	-	-	Thickener: B...	-
4	Barium soap for lubricants	-	-	-	Thickener: B...	-
5	Calcium complex soap for lu...	-	-	-	Thickener: C...	-
6	Calcium soap for lubricants	-	-	-	Thickener: C...	-
7	Lithium complex soap for lu...	-	-	-	Thickener: Lit...	-
8	Lithium soap for lubricants	-	-	-	Thickener: Lit...	-
9	Polyurea for lubricants	-	-	-	Thickener: P...	-
10	Sodium soap for lubricants	-	-	-	Thickener: S...	-

Range Values

The range values of the basic substances must meet the requirements of Recommendation 001.

Change Management:

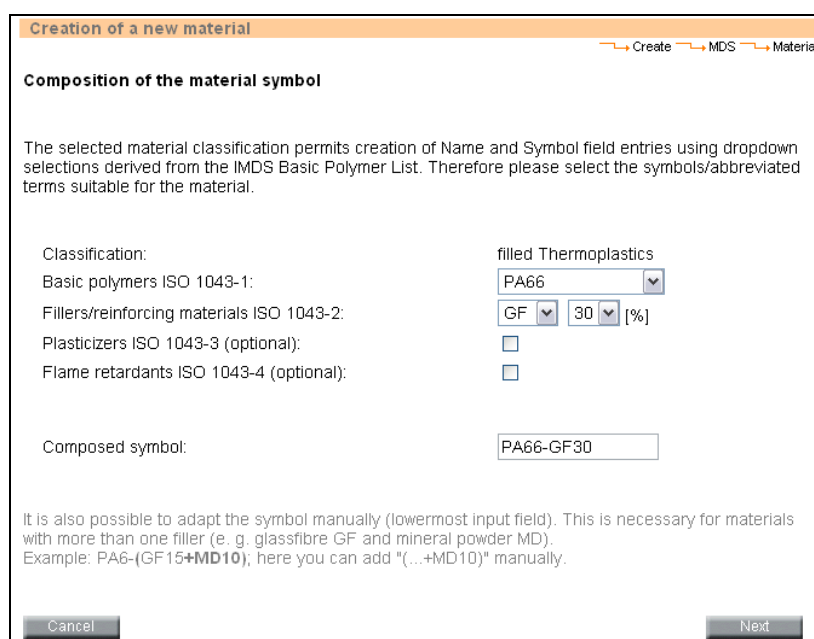
Material data sheets released prior to a new version of Recommendation 001 that changed permitted range values are not required to be reworked to change the Range Values.

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2.2 Additional information on the creation of MDSs for Thermoplastics – Material Classifications 5.1.x

A Thermoplastic polymer compound is a homogenous mixture of a basic polymer and functional additives (e.g. fillers, plasticizers, flame retardants etc.). When creating material MDSs for a thermoplastic (material classification 5.1.x), a wizard will guide you through the symbol creation process in order to achieve the correct symbol of the polymer material.



After completing the wizard, you need to select the substances (e.g. *basic polymers* and functional additives) from the basic substance list.

Should you have more than one filler, you can adjust the Composed Symbol with the necessary information on this screen or edit the symbol on the ingredients page. The percentage (%) of fillers in the pull down menu is represented in increments of 5%. If you are using a range for the filler content, select the percentage that falls within the range of substance. If you are using a fixed filler content that does not fit in the preselected 5% increments, you can edit this number either directly in the wizard or later on the ingredients page of the MDS. However, the 5% increment is generally seen as accurate enough for the symbol.

In the basic substance list, you can find:

- *Basic polymers* according to ISO 1043-1 by searching for „basic polymer“ in the name field
- *Impact-modified basic polymers* according to ISO 1043-1 by searching for “basic polymer impact modified” in the name field
- *Fillers* according to ISO 1043-2 by searching for „ISO 1043-2“ in the name field

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- *Plasticizers* according to ISO 1043-3 by searching for „ISO 1043-3“ in the name field
- *Flame retardants* according to ISO 1043-4 by searching for „ISO 1043-4“ in the name field

These ISO 1043 type entries must not be used in place of declarable or prohibited substances (see GADSL [suppliers to Renault: BGO list]). Any GADSL/BGO list Declarable/Prohibited colorant, filler, plasticizer or flame retardant must be listed separately.

In Thermoplastics, it is possible to have sub-materials. These sub-materials are usually masterbatches or concentrates (basic polymers with colorants/pigments, flame retardants, etc.). Sub-materials are normally used in materials in amounts of 1 to 5%. Consequently, the substances contained in these types of sub-materials are typically diluted in the top-level material to a level of 0.5 to 3%. If a thermoplastic material consists of sub-materials, any restrictions concerning the substance ranges and sum of wildcards and confidential substances do not apply to the sub-materials, but are calculated with regard to the topmost material level (cf. IMDS 001, Rule 5.1.A and fig. 7, p. 24).

Example for selection from the Basic Substance List:

Menu
Search
Log off

MDS and Module Search

Search Criteria: Name=basic polymer

428 items found. Ordered ascending by "Name"

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

No.

Name

CAS No.

EU-Index

EINECS-No.

Synonym

GAD...

1

AAMS

-

-

-

Basic Polyme...

-

2

ABAK

-

-

-

Basic Polyme...

-

3

ABMAMOL

-

-

-

Basic Polyme...

-

4

ABS

-

-

-

Basic polyme...

-

5

ABS+ASA

-

-

-

Basic Polyme...

-

6

ABS+PA6

-

-

-

Basic Polyme...

-

7

ABS+PBT

-

-

-

Basic Polyme...

-

8

ABS+PBT-I

-

-

-

Basic Polyme...

-

9

ABS+PC

-

-

-

Basic Polyme...

-

10

ACS

-

-

-

Basic Polyme...

-

11

AEPDS

-

-

-

Basic Polyme...

-

12

AES

-

-

-

Basic Polyme...

-

13

AMMA

-

-

-

Basic Polyme...

-

14

APAO

-

-

-

Basic Polyme...

-

15

AS

-

-

-

Basic Polyme...

-

16

ASA

-

-

-

Basic Polyme...

-

17

CA

-

-

-

Basic Polyme...

-

18

CAB

-

-

-

Basic Polyme...

-

19

CABPMA

-

-

-

Basic Polyme...

-

20

CAP

-

-

-

Basic polyme...

-

21

CEF

-

-

-

Basic Polyme...

-

22

CF

-

-

-

Basic Polyme...

-

23

CMC

-

-

-

Basic Polyme...

-

Search for basic polymers ISO 1043-1: „basic polymer“

Result: All basic polymers ISO 1043-1

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Menu
Search
Log off

MDS and Module Search

Search Criteria: Name=basic polymer impact modified

39 items found. Ordered ascending by "Name"

No.	Name	CAS No.	EU-Index	EINECS-No.	Synonym	GAD...
1	MF-I	-	-	-	Basic Polyme...	-
2	MUF-I	-	-	-	Basic Polyme...	-
3	PA6+ABS-I	-	-	-	Basic Polyme...	-
4	PA6+PA66-I	-	-	-	Basic Polyme...	-
5	PA6-HI	-	-	-	Basic polyme...	-
6	PA6-I	-	-	-	Basic polyme...	-
7	PA6/12-I	-	-	-	Basic Polyme...	-
8	PA6/6T-I	-	-	-	Basic Polyme...	-
9	PA612-I	-	-	-	Basic Polyme...	-
10	PA66+ABS-I	-	-	-	Basic Polyme...	-
11	PA66+PA6-I	-	-	-	Basic Polyme...	-
12	PA66-I	-	-	-	Basic polyme...	-
13	PA66/6-I	-	-	-	Basic polyme...	-
14	PA6T/66-I	-	-	-	Basic Polyme...	-
15	PA6T/XT-I	-	-	-	Basic Polyme...	-
16	PBT+ASA-I	-	-	-	Basic Polyme...	-
17	PBT+PC-I	-	-	-	Basic Polyme...	-
18	PBT+PET-I	-	-	-	Basic polyme...	-
19	PBT+SAN-I	-	-	-	Basic Polyme...	-
20	PBT-I	-	-	-	Basic Polyme...	-
21	PBTC-I	-	-	-	Basic Polyme...	-

Search for basic polymers impact modified ISO 1043-1: „basic polymer impact modified“
Result: All basic polymers impact modified ISO 1043-1

Menu
Search
Log off

MDS and Module Search

Search Criteria: Name=ISO 1043-2

17 items found. Ordered ascending by "Name"

No.	Name	CAS No.	EU-Index	EINECS-No.	Synonym	GAD...
1	AR-Fibre	-	-	-	ISO 1043-2	-
2	Boron	7440-42-8	-	231-151-2	ISO 1043-2	-
3	Calcium-carbonate	471-34-1	-	207-439-9	ISO 1043-2	-
4	Carbon	7440-44-0	-	231-153-3	ISO 1043-2	-
5	Cellulose fibre	-	-	-	ISO 1043-2	-
6	CF-Fibre	-	-	-	ISO 1043-2	-
7	GF-Fibre	-	-	-	ISO 1043-2	-
8	Glass spheres	-	-	-	ISO 1043-2	-
9	Graphite	7782-42-5	-	231-955-3	ISO 1043-2	-
10	GS-Flake	-	-	-	ISO 1043-2	-
11	Kaolin	1332-58-7	-	-	ISO 1043-2	-
12	Mica	-	-	-	ISO 1043-2	-
13	Mineral powder	-	-	-	ISO 1043-2	-
14	Silicate	-	-	-	ISO 1043-2	-
15	Talc (Magnesium silicate)	-	-	-	ISO 1043-2	-
16	Wood fibres	-	-	-	ISO 1043-2	-
17	Wood powder	-	-	-	ISO 1043-2	-

View
New Search

Search for fillers ISO 1043-2: „ISO 1043-2“
Result: All fillers ISO 1043-2

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Menu
Search
Log off

MDS and Module Search

Search Criteria: Name=ISO 1043-3

Search

20 items found. Ordered ascending by "Name"

No.	Name	CAS No.	EU-Index	EINECS-No.	Synonym	GAD...
1	1,2-Benzenedicarboxylic aci...	71888-89-6	-	276-158-1	ISO 1043-3	-
2	1,2-Benzenedicarboxylic aci...	68515-42-4	-	271-084-6	ISO 1043-3	D
3	Adipate plasticizer ISO 104...	-	-	-	ISO 1043-3:...	-
4	Azelaate plasticizer ISO 1043...	-	-	-	ISO 1043-3:...	-
5	Bis(2-ethylhexyl) isophthalate	137-89-3	-	205-308-0	ISO 1043-3	-
6	Butylbenzylphthalate	85-68-7	-	201-622-7	ISO 1043-3	D/SV...
7	Di-(2-ethylhexyl)phthalat	117-81-7	-	204-211-0	ISO 1043-3	D/SV...
8	Di-n-octylphthalate	117-84-0	-	204-214-7	ISO 1043-3	-
9	Dibenzate plasticizer ISO 1...	-	-	-	ISO 1043-3:...	-
10	Dibutylphthalate	84-74-2	-	201-557-4	ISO 1043-3	D/SV...
11	DIDP	68515-49-1	-	271-091-4	ISO 1043-3:...	-
12	Fumarate plasticizer ISO 1...	-	-	-	ISO 1043-3:...	-
13	Maleate plasticizer ISO 104...	-	-	-	ISO 1043-3:...	-
14	o-acetylitate plasticizer IS...	-	-	-	ISO 1043-3:...	-
15	Phenyl phthalate	84-62-8	-	201-546-4	ISO 1043-3	-
16	Phosphate plasticizer ISO 1...	-	-	-	ISO 1043-3:...	-
17	Phthalate plasticizer ISO 10...	-	-	-	ISO 1043-3:...	-
18	Polymeric plasticizer ISO 10...	-	-	-	ISO 1043-3:...	-
19	Sebacate plasticizer ISO 10...	-	-	-	ISO 1043-3:...	-
20	Trimellitate plasticizer ISO 1...	-	-	-	ISO 1043-3:...	-

View

New Search

Search for plasticizers ISO 1043-3: „ISO 1043-3“
Result: All plasticizers ISO 1043-3

Menu
Search
Log off

MDS and Module Search

Search Criteria: Name=ISO 1043-4

Search

27 items found. Ordered ascending by "Name"

No.	Name	CAS No.	EU-Index	EINECS-No.	Synonym	GAD...
1	1,2-Dibromotetrafluoroethane	124-73-2	-	204-711-9	ISO 1043-4	P
2	1-Butanesulfonic acid, 1,1,2...	29420-49-3	-	249-616-3	ISO 1043-4	-
3	aliphatic fluorinated compo...	-	-	-	ISO 1043-4:...	-
4	Antimonoxide	1327-33-9	-	215-474-6	ISO 1043-4	-
5	Antimony compound, ISO 1...	-	-	-	ISO 1043-4: fl...	-
6	Antimonytrioxide	1309-64-4	051-005-00-X	215-175-0	ISO 1043-4	D
7	Boron or zinc compound IS...	-	-	-	ISO 1043-4: fl...	-
8	Bromochlorodifluoromethane	353-59-3	-	206-537-9	ISO 1043-4	P
9	Bromomethane	74-83-9	602-002-00-2	200-813-2	ISO 1043-4	P
10	Carbon	7440-44-0	-	231-153-3	ISO 1043-4	-
11	Decabromodiphenylether	1163-19-5	-	214-604-9	ISO 1043-4,...	D
12	Diphenyl ether, octabromo...	32536-52-0	-	251-087-9	ISO 1043-4,...	P
13	Diphenyl ether, pentabromo...	32534-81-9	-	251-084-2	ISO 1043-4,...	P
14	Graphite	7782-42-5	-	231-955-3	ISO 1043-4	-
15	Halogenated compound IS...	-	-	-	ISO 1043-4: fl...	-
16	Inorganic phosphorus comp...	-	-	-	ISO 1043-4: fl...	-
17	Metal oxide, hydroxide or sa...	-	-	-	ISO 1043-4: fl...	-
18	Nitrogen compound ISO 10...	-	-	-	ISO 1043-4: fl...	-
19	Organic phosphorus compo...	-	-	-	ISO 1043-4: fl...	-
20	Polybrominated biphenyl	59536-65-1	-	-	ISO 1043-4	P
21	Polybrominated terphenyls	-	-	-	ISO 1043-4	-
22	Polychlorinated biphenyls	1336-36-3	602-039-00-4	215-648-1	ISO 1043-4	P
23	Polychlorinated terphenyls	61788-33-8	-	262-068-2	ISO 1043-4	P

View

New Search

Search for flame retardants ISO 1043-4: „ISO 1043-4“
Result: All flame retardants ISO 1043-4

Examples for thermoplastic MDSs:

Thermoplastics consisting of basic substances:

Thermoplastics consisting of sub-materials:

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PA66-GF30

- PA66 (65.00%)
- GF-Fibre (30.00%)
- Further Additives, not to declare (5.00%)

PA66 Compound

- PA66 (95.00%)
 - Further Additives, not to declare (5.00%)
- PA66 Colour Masterbatch (5.00%)
 - PA66 (18.00%)
 - Further Additives, not to declare (2.00%)
 - Pigment portion, not to declare (80.00%)

2.3 Additional information on the creation of MDSs for Thermoplastic Elastomers – Material Classification 5.2

A Thermoplastic Elastomer (TPE) compound is a homogenous mixture of a TPE material and functional additives. When creating an MDS of a TPE material (material classification 5.2), a wizard will guide you through the creation process in order to achieve a correct symbol for the TPE compound.

Creation of a new material

Create → MDS → Material

Composition of the material symbol

The selected material classification permits creation of Name and Symbol field entries using dropdown selections derived from the IMDS Basic Polymer List. Therefore please select the symbols/abbreviated terms suitable for the material.

Classification:

Thermoplastic elastomers

Thermoplastic elastomers ISO 18064:

TPS-SEBS

Composed symbol:

TPS-SEBS

It is also possible to adapt the symbol manually (lowermost input field).

Cancel

Next

After completing the wizard, you need to select the substances (like *basic thermoplastic elastomers* and functional additives) from the basic substance list.

Basic thermoplastic elastomers are listed in the basic substance list under their ISO 18064 symbols. You can find them in the substance list by searching for “thermoplastic elastomer” in the name field.

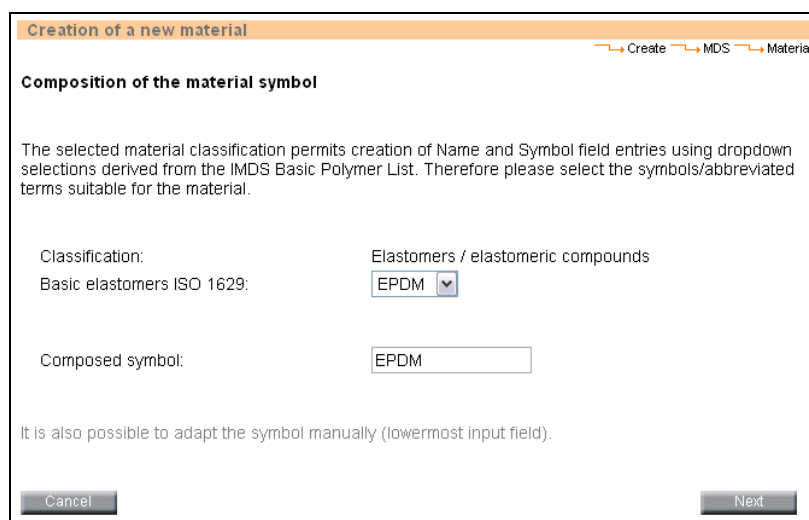
For complex composed TPE products, the working procedure is the same as for complex composed elastomers/elastomeric compounds (see 2.4).

2.4 Additional information on the creation of MDSs for Elastomers/Elastomeric Compounds – Material Classification 5.3

Elastomers/elastomeric compounds are a homogenous mixtures of a base rubber material and functional additives. When creating a material MDS for an elastomer/elastomeric compound (material classification 5.3), a wizard will guide you through the creation process in order to achieve a correct symbol for the elastomer/elastomeric compound.

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After completing the wizard, you need to select the substances (like *basic rubbers* and functional additives) from the basic substance list.

Basic rubbers are listed under their ISO 1629 symbols. You can find them in the basic substance list by searching for “basic rubber” in the name field.

2.5 MDS creation for Complex Products of Thermoplastics, TPEs and/or Elastomers

Complex products composed of thermoplastics, thermoplastic elastomers and/or elastomers/elastomeric compounds (e.g. fuel hoses) are constructed as shown below for an example elastomer/elastomeric compound.

For complex composed elastomers/elastomeric compounds that contain different rubber or plastic materials (e.g. a fuel hose with inner layer, intermediate layer, outer layer and a fiber reinforcement between the layers), it is recommended to add each contained material beneath a semi-component describing the composite product. The top level semi-component is not a homogenous material and should be described as shown below. The different components of the product can be described as materials.

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Examples for MDSs:

Ingredients

ECO 49390058 / 0.01 (Node ID 49390058)

Create

MDS

Ingrd

+

+

+

GADSL

ECO

- Carbon black 33-36%
- ECO Rest
- Nickel bis(dibutylthiocarbamate) 1-2%
- Imidazolidine-2-thione 2-3%
- Dioctyl-phosphonate 2-3%
- Misc., not to declare 5-6%
- Clay 0.5-1.5%

Details

Type

Material (MDS)

ID / Version

49390058 / 0.01

MDS Supplier

IMDS-Committee

Name

ECO

(EN)

Trade name

ECO 2211

(EN)

Internal Mat.-No.

Std. Mat.-No.

Symbol

ECO

Edit

Classification

Elastomers / elastom...

Search

Norms/
Standards

ISO 1629

+

-

Inhouse

Norms

Supplier

Remark

(EN)

Part 1: Intermediate layer ECO

Ingredients

Aramid fabric 5537798 / 4.00 (Node ID 5540213)

VDA 232-101

+

Aramid fabric

- Further Additives 0.5-1.5%
- 1,4-Benzenedicarbonyl dichloride Rest

Type

ID / Version

MDS Supplier

Name

Trade name

Material-No.

Symbol

Classification

Norms/
Standards

Inhouse

Norms

Supplier

Remark

Material (MDS)

5537798 / 4.00

IMDS-Committee

Aramid fabric
(EN)

AR 44321
(EN)

AR

Textiles

ISO 2076

Setila

ABC

(EN)

Part 2: Textile fabric

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Ingredients
ECO 49390058 / 0.01 (Node ID 49390058) → Create → MDS → Ingredient

GADSL

ECO

- Carbon black 2-3% Rest
- ECO 1-2%
- Nickel bis(dibutylthiocarbamate) 2-3%
- Imidazolidine-2-thione 2-3%
- Diocetyl-phosphonate 0.5-1.5%
- Misc., not to declare 3.4%
- Phthalate plasticizer ISO 1043-3, not declarable

Part 3: Outside Layer ECO

Details

Type Material (MDS)
ID / Version 49390058 / 0.01
MDS Supplier IMDS-Committee
Name ECO (EN)
Trade name ECO 5577 (EN)
Internal Mat.-No.
Std. Mat.-No.
Symbol ECO Edit
Classification Elastomers / elastom... Search
Norms/ Standards ISO 1629
Inhouse Norms
Supplier
Remark (EN)

Ingredients
Fuel Hose ECO/AR/... 48075003 / 0.01 (Node ID 48075003) → Search → Edit → Module → Ingredients

GADSL

Fuel Hose ECO/AR/ECO

- ECO (inner layer) 40-43%
- Aramid fabric 5-6%
- ECO (outer layer) Rest

Combination of the 3 materials to a composed rubber product

Details

Type Semicomponent (Module)
ID / Version 48075003 / 0.01
Article Name Fuel Hose ECO/AR/EC
Item-/Material-No. V44333
Development Sample Report ☐

2.6 MDS creation for glass, ceramic and enamel

Under the REACH regulation glass is a UVCB substance (unknown or variable composition, complex reaction products or biological materials). It is virtually considered as a single substance and does not contain individual elements or oxides anymore. This approach will as well be used for IMDS entries of glass, ceramic and enamel. Declarable constituents and additives still have to be reported separately.

All newly created entries for glass, ceramic and enamel must be described by using a single (pseudo) substance for the basic material, according to the approach listed below. An additional functionality in IMDS (coming latest 2nd quarter 2014) will support the update of higher numbers of existing entries. If a change is impossible old entries still can be used.

Annex I to the IMDS001 Recommendation**IMDS 001a****Examples:**Simple Glass:

- Glass
 - └ ▲ Glass without declarable substances (German: "Glas ohne deklarationspflichtige Inhaltsstoffe")

Specific glass:

- Tinted Glass
 - └ ▲ Glass without declarable substances
 - └ ▲ Miscellaneous, not to declare
 - └ ▲ Pigment portion, not to declare

Lead containing glass:

- Glass containing Lead
 - └ ▲ Glass without declarable substances
 - └ ▲ Lead

Should the glass contain any other declarable substances this has to be specified in addition, according to the general rules of IMDS Recommendation 001.

Similar rules are to be applied for ceramic and enamel materials, using following pseudo substances:

- ▲ Ceramic without declarable substances (German: "Keramik ohne deklarationspflichtige Inhaltsstoffe")
- ▲ Enamel without declarable substances (German: "Email ohne deklarationspflichtige Inhaltsstoffe")

Films or coatings applied on glass must be reported as separate material.

For glass, ceramic or enamel as an ingredient in a composed material just use the single (pseudo) substance

**Annex I to the IMDS001 Recommendation****IMDS 001a****3 Revisions**

Rev.	Date	Description / Reason	Originating Committee
1	Feb 2010	Initial version	IMDS SC
2	Jul 2010	Adding chapter 2 “Examples”	IMDS SC
3	Sep 2011	Adding chapter 2.2 – 2.5	IMDS SC
4	Nov 2011	Minor corrections	IMDS SC
5	April 2012	Harmonization of wording REC019 and REC001 Annex I (Classification 8.1)	IMDS SC
6	April 2013	Harmonization of wording in the description for classification 5.1	IMDS SC
6	September 2013	Addition of paragraph 2.6 MDS creation for glass, ceramic and enamel	IMDS SC