

Inorganic Phosphates Consortium Sameness Identity Definitions (SIPs) for substance dossiers submitted in 2010

Important information:

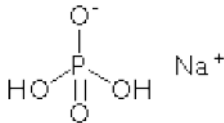
The Registration Dossier prepared, and in particular the hazard assessments addresses the pure substance, but also covers the substance (as placed on the market) if and only if purity and impurities conform to the levels indicated in these Sameness Proposals.

These ranges of purity / impurities are specified in the common part of the IUCLID dossier (non-confidential part of the Joint Registration submission, IUCLID \$4 – Physical and chemical properties – Endpoint summary) and for Classified Substances in the Substance Composition section (1.2) of the CSR (a model CSR will be provided by the IP Consortium, but is to be submitted separately by each Registrant). Each registrant will further have to specify separately the impurities in their own product, in the company-specific (confidential) part of their Registration submission (IUCLID \$1.2).

If a Registrant's substance does not conform to these specifications then the Registrant will have to justify that the differences do not modify the IUCLID 5 (and CSR conclusions for Classified Substances) and do not require a different Classification and Labelling or different exposure scenarios. In this case, this information must be provided in the company specific (confidential) registration dossier, and may result in additional Fees being payable to ECHA.

IP2: Sodium dihydrogenorthophosphate.....	2
IP3: Disodium hydrogenorthophosphate	3
IP4: Trisodium orthophosphate	4
IP5: Disodium dihydrogenpyrophosphate	5
IP7: Tetrasodium pyrophosphate	6
IP10: Sodium metaphosphate.....	7
IP12: Potassium dihydrogenorthophosphate (MKP)	8
IP13: Dipotassium hydrogenorthophosphate (DKP).....	9
IP55: Potassium pentahydrogen bis(phosphate).....	10
IP15: Tetrapotassium pyrophosphate.....	11
IP16: Pentapotassium triphosphate	12
IP21: Calcium bis(dihydrogenorthophosphate) (MCP)	13
IP60: MDCP Calcium phosphate reaction mass	16
IP23: Tricalcium bis(orthophosphate).....	17
IP24: Pentacalcium hydroxide tris(orthophosphate).....	18
IP39: Aluminium tris dihydrogenphosphate	21
IP47: Disodium fluorophosphate	22
IP48 (Ortho) phosphoric acid.....	23

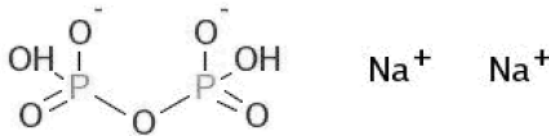
IP2: Sodium dihydrogenorthophosphate

Type of substance	mono-constituent
Origin	inorganic
Reference EC number (s)	231-449-2
Other EC numbers considered to be the same substance	
EC name	sodium dihydrogenorthophosphate
CAS number (s)	7558-80-7 (anhydrous), 13472-35-0, 10049-21-5
SMILES	OP(=O)(O)[O-].[Na+]
Molecular formula (or formulae)	H ₃ O ₄ P.Na or NaH ₂ PO ₄
EU food legislation number / INS n°	E339i
Structure image or diagram (indicative)	
Molecular weight (or range)	120 - 121
Granulometry range	Between 10% and ≥50% of particles have a diameter of <100 μm.
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was between pH3.6 to pH 4.
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >90% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · All hazardous impurities are < 0.1% 	

IP3: Disodium hydrogenorthophosphate

Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-448-7
Other EC numbers considered to be the same substance	N/A
EC name	disodium hydrogenorthophosphate
CAS number (s)	7558-79-4 (anhydrous), 10028-24-7, 10039-32-4, 7782-85-6
SMILES	OP(=O)([O-])[O-].[Na+].[Na+]
EU food legislation number / INS n°	E339ii
Molecular formula (or formulae)	H ₃ O ₄ P.2Na or Na ₂ HPO ₄
Structure image or diagram (indicative)	
Molecular weight (or range)	142 - 144
Granulometry range	Ca. 10% of particles have a diameter of <100 µm.
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was pH 9.2
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >90% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · All hazardous impurities are < 0.1% 	

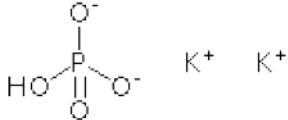
IP4: Trisodium orthophosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-509-8
Other EC numbers considered to be the same substance	N/A
EC name	trisodium orthophosphate
CAS number (s)	7601-54-9 (anhydrous), 10101-89-0, 15819-50-8, 10361-89-4, 60593-58-0, 60593-59-1
SMILES	[O-]P(=O)([O-])[O-].[Na+].[Na+].[Na+]
EU food legislation number / INS n°	E339iii
Molecular formula (or formulae)	H ₃ O ₄ P.3Na or Na _(3+x) PO ₄ .H _x
Structure image or diagram (indicative)	<p>The diagram shows a central phosphorus atom (P) double-bonded to one oxygen atom (O) and single-bonded to three oxygen atoms (O), each with a negative charge (O⁻). Three sodium ions (Na⁺) are shown nearby, representing the counterions of the phosphate group.</p>
Molecular weight (or range)	164 - 167
Granulometry range	More than 10% of particles are < 100µm in diameter
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was pH 12.4 -12.6
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >90% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · All hazardous impurities are < 0.1% 	

IP5: Disodium dihydrogenpyrophosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-835-0
Other EC numbers considered to be the same substance	N/A
EC name	disodium dihydrogenpyrophosphate
CAS number (s)	7758-16-9
SMILES	<chem>[OP(=O)([O-])OP(=O)(O)[O-].[Na+].[Na+]</chem>
EU food legislation number / INS n°	E450i
Molecular formula (or formulae)	H ₄ O ₇ P ₂ .2Na or Na ₂ H ₂ P ₂ O ₇
Structure image or diagram (indicative)	
Molecular weight (or range)	222 - 224
Granulometry range	Between 25% and ≥50% of particles have a diameter of <100 μm.
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was pH 3.8-3.9.
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> • Substance >90% purity • All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties • All hazardous impurities are < 0.1% 	

IP7: Tetrasodium pyrophosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-767-1
Other EC numbers considered to be the same substance	
EC name	tetrasodium pyrophosphate
CAS number (s)	7722-88-5 (anhydrous), 13472-36-1
SMILES	<chem>[O-]P(=O)([O-])OP(=O)([O-])[O-].[Na+].[Na+].[Na+].[Na+]</chem>
EU food legislation number / INS n°	E450iii
Molecular formula (or formulae)	H ₄ O ₇ P ₂ .4Na or Na ₄ P ₂ O ₇
Structure image or diagram (indicative)	
Molecular weight (or range)	266 - 270
Granulometry range	Between 10% and ≥50% of particles have a diameter of <100 μm.
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was pH 9.8-9.9
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >90% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · All hazardous impurities are < 0.1% 	

IP10: Sodium metaphosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	233-343-1
Other EC numbers considered to be the same substance	
EC name	sodium metaphosphate
CAS number (s)	10124-56-8
SMILES	[O-]P1(=O)OP(=O)(OP(=O)(OP(=O)(OP(=O)(OP(=O)(O1)[O-])[O-])[O-])[O-]
Molecular formula (or formulae)	H ₆ O ₁₈ P ₆ .6Na or O ₁₈ P ₆ .6Na
Structure image or diagram (indicative)	<p>The diagram illustrates the structure of sodium metaphosphate. It features a central cyclic chain of six phosphate groups. Each phosphate group consists of a phosphorus atom double-bonded to one oxygen atom and single-bonded to three oxygen atoms. The phosphorus atoms are connected to each other through their single-bonded oxygen atoms, forming a six-membered ring. Six sodium ions (Na+) are shown as counterions, each associated with one of the single-bonded oxygen atoms on the ring. The overall structure is represented as H₆O₁₈P₆.6Na or O₁₈P₆.6Na.</p>
Molecular weight (or range)	612 – 618
Granulometry range	Between 10% and ≥50% of particles have a diameter of <100 µm.
pH range for aqueous solution	The pH of solution observed in the water solubility study was 7.2
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >80% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · No one impurity is >10% · All hazardous impurities are < 0.1% 	

IP12: Potassium dihydrogenorthophosphate (MKP)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-913-4
Other EC numbers considered to be the same substance	
EC name	potassium dihydrogenorthophosphate
CAS number (s)	7778-77-0
SMILES	OP(=O)(O)[O-].[K+]
EU food legislation number / INS n°	E340i
Molecular formula (or formulae)	H ₂ O ₄ P.K or H ₃ O ₄ P.K
Structure image or diagram (indicative)	
Molecular weight (or range)	136 - 137
Granulometry range	Between 10% and ≥35% of particles have a diameter of <100 µm.
pH range for aqueous solution	The pH of the solution, observed in the water solubility study, was pH 4.2 -4.5.
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	80 %
Lower content	> 70 %
Higher content	100 %
Impurities in the substance: The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below :	
Dipotassium hydrogenorthophosphate - # EINECS : 231-834-5	<15%
Potassium sulphate # EINECS : 231-915-5	<10%
Potassium chloride #EINECS : 231-211-8	<5%
Calcium hydrogenorthophosphate #EINECS : 231-826-1	<5%
All other impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
Hazardous impurities other than those mentioned above	<1%

IP13: Dipotassium hydrogenorthophosphate (DKP)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-834-5
Other EC numbers considered to be the same substance	
EC name	dipotassium hydrogenorthophosphate
CAS number (s)	7758-11-4 (anhydrous), 16788-56-1, 78436-04-1
SMILES	OP(=O)([O-])[O-].[K+].[K+]
EU food legislation number / INS n°	E340ii
Molecular formula (or formulae)	H ₃ O ₄ P.2K
Structure image or diagram (indicative)	
Molecular weight (or range)	175
Granulometry range	Ca. 100% of particles have a diameter of <100 µm.
pH range for aqueous solution	
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	>90 %
Lower content	> 70 %
Higher content	100 %
Impurities in the substance : The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below :	
Potassium dihydrogenorthophosphate # EINECS : 231-913-4	<15%
Other inorganic phosphates or other inorganic substances related to the registered substance which do not significantly affect the toxicological and ecotoxicological properties of the registered substance	<20% in total
All other impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
Hazardous impurities	<1%

IP55: Potassium pentahydrogen bis(phosphate)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	238-961-5
Other EC numbers considered to be the same substance	
EC name	potassium pentahydrogen bis(phosphate)
CAS number (s)	14887-42-4
SMILES	[O-]P(=O)([O-])[O-].[K+].[K+].[K+]
Molecular formula (or formulae)	H3O4P.1/2K / K3O4P
Structure image or diagram (indicative)	
Molecular weight (or range)	212
Granulometry range	ca. 10% of particles have a particle size of <254.4 μm. No inhalation risk.
pH range for aqueous solution	The pH, measured in the water solubility study was found to be pH 1.
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> • Substance >90% purity • All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties • All hazardous impurities are < 0.1% 	

IP15: Tetrapotassium pyrophosphate

Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	230-785-7
Other EC numbers considered to be the same substance	
EC name	tetrapotassium pyrophosphate
CAS number (s)	7320-34-5 (anhydrous) 79102-70-8 (monohydrate) 7790-67-2 (dehydrate)
SMILES	<chem>[O-]P(=O)([O-])OP(=O)([O-])[O-].[K+].[K+].[K+].[K+]</chem>
EU food legislation number / INS n°	E450v
Molecular formula (or formulae)	H ₄ O ₇ P ₂ .4K or O ₇ P ₂ .4K
Structure image or diagram (indicative)	
Molecular weight (or range)	330 - 334
Granulometry range	Between 10% and ≥70% of particles have a diameter of <100 μm.
pH range for aqueous solution	The pH of the solution observed in the water solubility study was pH 10.7 -10.9.
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <ul style="list-style-type: none"> · Substance >90% purity · All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties · All hazardous impurities are < 0.1% 	

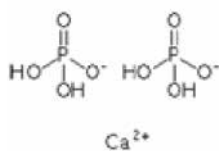
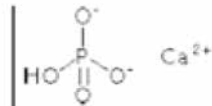
IP16: Pentapotassium triphosphate

Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	237-574-9
Other EC numbers considered to be the same substance	
EC name	pentapotassium triphosphate
CAS number (s)	13845-36-8 (anhydrous) 66904-52-7 (dihydrate)
SMILES	<chem>[O-]P(=O)([O-])OP(=O)([O-])OP(=O)([O-])[O-].[K+].[K+].[K+].[K+].[K+]</chem>
EU food legislation number / INS n°	E451ii
Molecular formula (or formulae)	H ₅ O ₁₀ P ₃ .5K or O ₁₀ P ₃ .5K
Structure image or diagram (indicative)	
Molecular weight (or range)	448 – 453
Granulometry range	Between 1% and ≥60% of particles have a diameter of <100 μm.
pH range for aqueous solution	9.0 – 12.5
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <p>Substance >90% purity</p> <p>All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties</p> <p>All hazardous impurities are < 0.1%</p>	

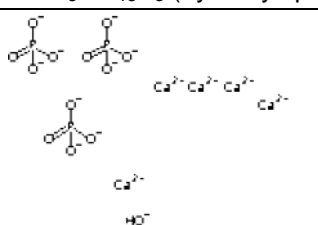
IP21: Calcium bis(dihydrogenorthophosphate) (MCP)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-837-1
Other EC numbers considered to be the same substance	266-030-3
EC name	Calcium bis(dihydrogenorthophosphate)
Synonyms	Monocalcium Phosphate (MCP), Monobasic Calcium Phosphate, Triple Super Phosphate
CAS number (s)	7758-23-8 (anhydrous), 10031-30-8 (1-hydrate), 65996-95-4 (TSP)
SMILES	[OP(=O)(O)[O-].OP(=O)(O)[O-].[Ca+2]
EU food legislation number / INS n°	E341i
Molecular formula (or formulae)	Ca(H ₂ PO ₄) ₂ or Ca.2H ₃ O ₄ P or CaH ₄ O ₈ P ₂
Structure image or diagram (indicative)	<p>The diagram shows two phosphate groups, each consisting of a central phosphorus atom double-bonded to one oxygen and single-bonded to three others (one hydroxyl group and two negatively charged oxygens). These two phosphate groups are coordinated to a central calcium ion (Ca²⁺).</p>
Molecular weight (or range)	234 -236
Granulometry range	Ca. 100% of particles have a diameter of <100 μm.
pH range for aqueous solution	.The pH of the solution observed in the water solubility study was pH 2.4.
Composition expressed as % dry weight, that is excluding water	
Typical purity of substance	80 %
Purity: lower content	70 %
Purity: higher content	100 %
Impurities in the substance: The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below :	
Calcium hydrogenorthophosphate # EINECS : 231-826-1	<10%
Calcium sulphate - # EINECS : 231-900-3	<10%
Mineral phosphate rock	<10%
Orthophosphoric acid - #EINECS : 231-633-2	<5%
Iron salts	<5%
Magnesium salts	<5%
Other inorganic phosphates or other inorganic substances related to the registered substance which do not significantly affect the toxicological and ecotoxicological properties of the registered substance	<10% in total
All other impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
Hazardous impurities other than those	<1%

mentioned above	
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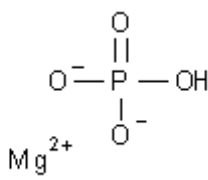
IP22: Calcium hydrogenorthophosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-826-1
Other EC numbers considered to be the same substance	
EC name	calcium hydrogenorthophosphate
Synonyms	Dicalcium Phosphate
	Dicalcium Orthophosphate
	Dibasic Calcium Phosphate
CAS number (s)	7757-93-9 (anhydrous), 7789-77-9 (2-hydrate)
SMILES	OP(=O)([O-])[O-].[Ca+2]
EU food legislation number / INS n°	E341ii
Molecular formula (or formulae)	CaHPO ₄ or Ca.H ₃ O ₄ P
Structure image or diagram (indicative)	
Molecular weight (or range)	136 - 138
Granulometry range	Up to 100% of particles have a diameter of <100 µm. Therefore the registration dossier will take into account the inhalation risk.
pH range for aqueous solution	The pH of the solution observed in the water solubility study was pH 6.5.
Composition expressed as % dry weight, that is excluding water	
Typical purity of substance	80 %
Purity: lower content	> 70 %
Purity: higher content	100 %
Impurities in the substance: The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below	
Calcium bis(dihydrogenorthophosphate) # EINECS : 231-837-1	<10%
Calcium sulphate - # EINECS : 231-900-3	<10%
Tricalcium bis(orthophosphate) #EINECS: 231-840-8	<5%
Mineral phosphate rock	<10%
Iron salts	<5%
Magnesium salts	<5%
Other inorganic phosphates or other inorganic substances related to the registered substance which do not significantly affect the toxicological and ecotoxicological properties of the registered substance	<10% in total
All other impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
Hazardous impurities, other than those above	<1%

IP60: MDCP Calcium phosphate reaction mass	
Type of substance	multi-constituent
Origin	Inorganic
Reference EC number (s)	None
Other EC numbers considered to be the same substance	Calcium phosphate
EC name	reaction mass of calcium bis(dihydrogenorthophosphate) and calcium hydrogenorthophosphate
Synonyms	MCP – DCP Reaction Mass, MDCP (Mono Di Calcium Phosphate)
CAS number (s)	Not applicable
SMILES	
EU food legislation number / INS n°	Not applicable
Molecular formula (or formulae)	CaHPO ₄ ; Ca(H ₂ PO ₄) ₂
Structure image or diagram (indicative)	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Calcium bis(dihydrogenorthophosphate)</p>  </div> <div style="text-align: center;"> <p>Calcium hydrogenorthophosphate</p>  </div> </div>
Molecular weight (or range)	420 - 430
Granulometry range	>1.4mm : 5% max
	>0.2 mm: 5% max
	0 % of particles have a diameter of <100 µm
pH range for aqueous solution	3 to 5
Composition expressed as % dry weight, that is excluding water	
Purity	
Range of MCP content	40-75%
Range of DCP content	10-40%
Impurities in the substance : The substance may contain the following main impurities, derived from the production process	
Tricalcium phosphate (Hydroxylapatite) EC# 215-145-7	< 10%
Phosphoric acid EC# 231-633-2	< 5 %
All other impurities > 5% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
All hazardous impurities	< 0.1%

IP23: Tricalcium bis(orthophosphate)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-840-8
Other EC numbers considered to be the same substance	
EC name	Tricalcium bis(orthophosphate)
Synonyms	Tricalcium Phosphate, Tricalcium Di(orthophosphate), β-Tricalcium Phosphate, Tribasic Calcium Phosphate
CAS number (s)	7758-87-4
SMILES	[O-]P(=O)([O-])[O-].[O-]P(=O)([O-])[O-].[Ca+2].[Ca+2].[Ca+2]
EU food legislation number / INS n°	E341iii (same as IP24)
Molecular formula (or formulae)	Ca ₃ (PO ₄) ₂ or Ca ₂ /3H ₃ O ₄ P or Ca ₃ O ₈ P ₂
Structure image or diagram (indicative)	<p>The diagram shows two phosphate groups (PO₄³⁻) and three calcium ions (Ca²⁺). Each phosphate group consists of a central phosphorus atom double-bonded to one oxygen and single-bonded to three negatively charged oxygen atoms. The three calcium ions are positioned around the phosphate groups, representing the ionic nature of the compound.</p>
Molecular weight (or range)	310
Granulometry range	Up to 100% of particles have a diameter of <100 μm. Therefore the registration dossier will take into account the inhalation risk.
pH range for aqueous solution	The pH of this solution observed in the water solubility study was pH 6.9 -7.3.
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	80 %
Lower content	> 70 %
Higher content	100 %
Impurities in the substance: The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below	
All impurities > 5% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
All hazardous impurities	< 1%

IP24: Pentacalcium hydroxide tris(orthophosphate)	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	235-330-6 *
Other EC numbers considered to be the same substance	215-145-7 270-423-5
EC names	Pentacalcium hydroxide tris(orthophosphate) *
Synonyms	Hydroxylapatite / Hydroxy Apatite Calcium Hydroxide Phosphate Pentacalcium Hydroxy Monophosphate Tricalcium Phosphate (frequently used commercial name) Bone ash
<i>NOTE: the Joint Registration Dossier will be submitted using the substance name and EINECS number marked with * above ONLY. The other names and EINECS numbers given above will be indicated in the Dossier as being covered because considered to be the same substance.</i>	
CAS number (s)	1306-06-5 (hydroxylapatite) 12167-74-7 (Calcium Hydroxide Phosphate) 68439-86-1 (Bone ash)
SMILES	[OH-].[O-]P(=O)([O-])[O-].[O-]P(=O)([O-])[O-].[O-]P(=O)([O-])[O-].[Ca+2].[Ca+2].[Ca+2].[Ca+2].[Ca+2]
EU food legislation number / INS n°	E341iii (same as IP23)
Molecular formula (or formulae)	Ca ₅ (PO ₄) ₃ OH or 10 CaO ₃ (P ₂ O ₅)H ₂ O or Ca ₅ HO ₁₃ P ₃ (hydroxylapatite)
Structure image or diagram (indicative)	
Molecular weight (or range)	502
Granulometry range	Up to 100% of particles have a diameter of <100 µm. Therefore the registration dossier will take into account the inhalation risk.
pH range for aqueous solution	pH of solution in water solubility study was pH 7.2 to 7.4
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	80 %
Lower content	> 70 %
Higher content	100 %
Impurities in the substance : The substance may contain the following main impurities, derived from the production process	
Calcium hydrogenorthophosphate EC# 231-826-1	< 25%
All other impurities > 5% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	

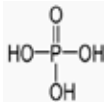
All hazardous impurities	< 0.1%
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IP29: Magnesium hydrogenorthophosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-823-5
Other EC numbers considered to be the same substance	
EC name	Magnesium hydrogenorthophosphate
Synonyms	Dimagnesium Phosphate
Dibasic Magnesium Phosphate	
CAS number (s)	7757-86-0 (anhydrous)
7782-75-4 (3-Hydrate)	
SMILES	OP(=O)([O-])[O-].[Mg+2]
EU food legislation number / INS n°	E343ii
Molecular formula (or formulae)	MgHPO ₄ or H ₃ O ₄ P.Mg
Structure image or diagram (indicative)	
Molecular weight (or range)	120
Granulometry range	Up to 100% of particles have a diameter of <100 µm. Therefore the registration dossier will take into account the inhalation risk.
pH range for aqueous solution	The pH of the solution observed in the water solubility study was pH 7.4 -7.6.
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	80 %
Lower content	> 70 %
Higher content	100 %
Impurities in the substance: The substance may contain the impurities indicated below, derived from the production process, each one present at the concentrations indicated below	
Magnesium bis(dihydrogenorthophosphate) # EINECS : 236-004-6	<15%
Magnesium oxide - #EINECS : 215-171-9	<10%
Orthophosphoric acid - #EINECS : 231-633-2	<5%
Other inorganic phosphates or other inorganic substances related to the registered substance which do not significantly affect the toxicological and ecotoxicological properties of the registered substance	<10% in total
All other impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
Hazardous impurities	<1%

IP39: Aluminium tris dihydrogenphosphate	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	236-875-2
Other EC numbers considered to be the same substance	
EC name	aluminium tris dihydrogenphosphate
CAS number (s)	13530-50-2
SMILES	OP(=O)([O-])[O-].[Al+3]
Molecular formula (or formulae)	Al.3H ₃ O ₄ P
Structure image or diagram (indicative)	
Molecular weight (or range)	318
Granulometry range	Up to 85% of particles have a diameter of <100 µm. Therefore the registration dossier will take into account the inhalation risk.
Form	Solid
pH range for aqueous solution	2.1 – 2.2 (50% solution)
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	80 %
Lower content	> 75 %
Higher content	100 %
Impurities in the substance : The substance may contain the following main impurities, derived from the production process	
Aluminium orthophosphate EC# 232-056-9	< 20%
All other impurities > 5% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties	
All hazardous impurities	< 1%

IP47: Disodium fluorophosphate

Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	233-433-0 *
Other EC numbers considered to be the same substance	231-552-2
<i>NOTE: the Joint Registration Dossier will be submitted using the EINECS number marked with * above ONLY. The other EINECS number given above will be indicated in the Dossier as being covered because considered to be the same substance.</i>	
EC name	Disodium fluorophosphate
CAS number (s)	10163-15-2, 7631-97-2
SMILES	[O-]P(=O)([O-])F.[Na+].[Na+]
Molecular formula (or formulae)	FH ₂ O ₃ P.2Na or FO ₃ P.2Na
Structure image or diagram (indicative)	
Molecular weight (or range)	142 – 144
Granulometry range	> 80% of particles have a diameter of <100 µm.
pH range for aqueous solution	pH 7.1-7.2
Composition expressed as % dry weight, that is excluding water	
<p>The main impurities are conform to the following limits (in all cases,):</p> <p>Substance >90% purity</p> <p>All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties</p> <p>All hazardous impurities are < 0.1%</p>	

IP48 (Ortho) phosphoric acid	
Type of substance	mono-constituent
Origin	Inorganic
Reference EC number (s)	231-633-2
Other EC numbers considered to be the same substance	
EC name	Orthophosphoric acid
Other names	Phosphoric acid
CAS number (s)	7664-38-2
SMILES	OP(O)(O)=O
Molecular formula	H ₃ PO ₄
Structural formula	
Molecular weight (or range)	97.9952
Physical form	The Dossier will address both solid phosphoric acid (colourless crystal) and liquid (solution in water)
Composition expressed as % dry weight, that is excluding water	
Purity	
Typical purity of substance	≥ 85%
Lower content	≥ 80%
Higher content	c. 100%
Impurities in the substance	
The main impurities are conform to the following limits:	
Iron expressed as Fe ₂ O ₃ (%):	0 - 6 % (proposed analysis method Fe: ICP)
Aluminium expressed as Al ₂ O ₃ (%):	0 – 8 % (proposed analysis method Al: ICP)
Magnesium expressed as MgO and/or MgF ₂ and/or MgSiF ₆ (%):	0 – 3 % (proposed analysis method Mg: ICP)
Calcium expressed as CaO and/or CaF ₂ (%):	0-2 % (proposed analysis method Ca: ICP or ISO 3707/ 1976)
Sulphate SO ₄ ²⁻ (%) expressed as H ₂ SO ₄ :	0-7,5% (proposed analysis method NFT 20-469/1984 or ISO 2997/1974)
Fluoride F ⁻ (%) expressed as Na ₂ SiF ₆ , MgF ₂ and/or CaF ₂ and/or MgSiF ₆ (%) :	0 – 3 % (proposed analysis method Selective electrode, ISO 3360/1976)
Phosphorous acid as H ₃ PO ₃ :	0 – 3% (proposed analysis method Iodine titration)
All other impurities must be lower than 0,1% for each chemical element (proposed analysis method ICP)	
All other impurities > 1% are inorganic substances, which do not significantly affect the substance's toxicological and ecotoxicological properties. All hazardous impurities other than those mentioned above are < 0.1%	