2.1. Manufacture

Table 2.2. Manufacture

	Manufacture
M-1	**Zinc bis(dihydrogen phosphate)production -Wet** Further description of manufacturing process: Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment** **(ERC1)** - **Discharge via additional off-site sewage treatment plant** **(ERC1)** Contributing activity/technique for the workers : - **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions** **(PROC 2)** - **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions** **(PROC 3)** - **Chemical production where opportunity for exposure arises** **(PROC 4)** - **Transfer of substance or mixture (charging and discharging) at dedicated facilities** **(PROC 8b)** - **Transfer of substance or mixture into small containers (dedicated filling line, including weighing)** **(PROC 9)** - **Manual maintenance (cleaning and repair) of machinery** **(PROC28)** - **Use as laboratory reagent** **(PROC 15)**

	registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=500 Tonnage (tonnes/year) *Related assessment: use assessed in a joint CSR*

2.2. Identified uses

Table 2.3. Formulation

	Formulation
F-1	**Formulation of fertilizer products** Further description of the use: Industrial mixing, granulation, prilling, pelletisation, coating and transfers. Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment (ERC2)** - **Discharge via additional off-site sewage treatment plant (ERC2)** Contributing activity/technique for the workers : - **Closed operations, no likelihood of exposure. (PROC 1)** - **Closed continuous process with occasional controlled exposure. (PROC 2)** - **Closed batch process with occasional controlled exposure. (PROC 3)** - **Production process where opportunity for exposure arises. (PROC 4)** -

	Process in stages with significant contact, including payloader work in bulk storages. **(PROC 5)** - **Transfers, loading, unloading, sampling and cleaning without dedicated engineering controls in place.** **(PROC 8a)** - **Transfers, loading, unloading, sampling and cleaning with dedicated engineering controls in place.** **(PROC 8b)** - **Packing liquids and solids in a dedicated filling line, including weighing.** **(PROC 9)** - **Production of fertilizers by granulation or low-energy compression.** **(PROC 14)** - **Use in laboratory for quality control and other analyses.** **(PROC 15)** - **Manual maintenance of equipment during intentional pauses and blockages.** **(PROC28)** **Product Category formulated:** PC 12: Fertilisers **Technical function of the substance:** no specific technical function registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=250 Tonnage (tonnes/year) Substance supplied to that use: *Related assessment: use assessed in a joint CSR*
F-2	**Formulation by incorporating fertilizers onto or into a matrix** <u>Further description of the use:</u> Industrial treatment of growth substrates or seeds with fertilizers or fertilizer granules with a coating material resulting in a slow release matrix. Contributing activity/technique for the environment :

	- **Direct discharge to water after on-site treatment** **(ERC3)** - **Discharge via additional off-site sewage treatment plant** **(ERC3)** Contributing activity/technique for the workers : - **Closed continuous process with occasional controlled exposure.** **(PROC 2)** - **Closed batch process with occasional controlled exposure.** **(PROC 3)** - **Production process where opportunity for exposure arises.** **(PROC 4)** - **Process in stages with significant contact.** **(PROC 5)** - **Transfers, loading, unloading, sampling and cleaning without dedicated engineering controls in place.** **(PROC 8a)** - **Transfers, loading, unloading, sampling and cleaning with dedicated engineering controls in place.** **(PROC 8b)** - **Packing the treated materials with dedicated engineering controls in place, including weighing.** **(PROC 9)** - **Treatment of growth substrates or seeds by dipping and pouring.** **(PROC 13)** - **Use in laboratory for quality control and other analyses.** **(PROC 15)** **Product Category formulated:** PC 12: Fertilisers **Technical function of the substance:** no specific technical function

	registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=250 Tonnage (tonnes/year) Substance supplied to that use: *Related assessment: use assessed in a joint CSR*
F-3	**Formulation of zinc bis(dihydrogen phosphate) containing metal surface treatment products.** <u>Further description of the use:</u> Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment** **(ERC2)** - **Discharge via additional off-site sewage treatment plant** **(ERC2)** Contributing activity/technique for the workers : - **Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.** **(PROC 1)** - **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.** **(PROC 2)** - **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.** **(PROC 3)** - **Chemical production where opportunity for exposure arises** **(PROC 4)** - **Mixing or blending in batch processes** **(PROC 5)** - **Transfer of substance or mixture (charging/discharging) at dedicated facilities** **(PROC 8b)**

	- **Transfer of substance or mixture into small containers (dedicated filling line, including weighing)** **(PROC 9)** **Product Category formulated:** PC 9a: Coatings and paints, thinners, paint removers ; PC 14: Metal surface treatment products ; PC 15: Non-metal-surface treatment products **Technical function of the substance:** antiscaling agent ; corrosion inhibitor ; durability agent ; plating agent ; surfactant ; waterproofing agent registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=500 Tonnage (tonnes/year) Substance supplied to that use: *Related assessment: use assessed in a joint CSR*
F-1	**Industrial formulation of lubricant additives, lubricants and greases.** <u>Further description of the use:</u> ATIEL A(i): Includes material transfers, mixing, large and small scale packing, sampling, maintenance and associated laboratory activities. Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment** **(ERC2)** - **Discharge via additional off-site sewage treatment plant** **(ERC2)** Contributing activity/technique for the workers : - **Closed continuous processes at elevated temperature with sampling, including grease manufacture** **(PROC 2)** - **Batch closed process with sampling. Blending and Filling processes (closed / dedicated). Includes both bulk and small quantity additions. May be at elevated temperature, e.g. grease manufacture.** **(PROC 3)**

	- **Batch open process. Blending and Filling processes (open / non dedicated). Includes addition of both bulk and small quantity additions, mixing operations. May be at elevated temperature, e.g. Grease manufacture.** **(PROC 4 ; PROC 5)** - **Sample collection of formulation** **(PROC 4)** - **Sample collection of incoming raw materials** **(PROC 8b)** - **Bulk transfers by fixed pipe or flexible hose** **(PROC 8b)** - **Small pack (drum/bag) transfers - dedicated facility** **(PROC 8b)** - **Small pack (drum/bag) transfers - non dedicated facility.** **(PROC 8a)** - **Maintenance & cleaning** **(PROC 8b)** - **Top filling of bulk containers (road cars etc)** **(PROC 8b)** - **Filling of drums and small packages** **(PROC 9)** - **QC & Laboratory** **(PROC 15)** - **Material storage** **(PROC 1 ; PROC 2)** **Product Category formulated:** PC 17: Hydraulic fluids ; PC 24: Lubricants, greases, release products ; PC 25: Metal working fluids **Technical function of the substance:** no specific technical function registration according to REACH Article 10; total tonnage manufactured/imported

	>=10tonnes/year per registrant Tonnage of substance for this use: <=100 Tonnage (tonnes/year) Substance supplied to that use: *Related assessment: use assessed in a joint CSR*

Table 2.4. Uses at industrial sites

	Uses at industrial sites
IW-1	**Industrial use of zinc bis(dihydrogen phosphate) as a conversion layer agent (phosphate coating).** Further description of the use: Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment** **(ERC5)** - **Discharge via additional off-site sewage treatment plant** **(ERC5)** Contributing activity/technique for the workers : - **Transfer and dilution of concentrated product by using dedicated dosing system** **(PROC 8b)** - **Brushing; Automated task; medium RMM** **(PROC 10)** - **Industrial uses; Treatment of articles by dipping and pouring** **(PROC 13)** - **Industrial spraying; Automated task; Open systems; Long term** **(PROC 7)** **Product Category used:** PC 14: Metal surface treatment products **Sector of end use:** SU 15: Manufacture of fabricated metal products, except machinery and equipment ; SU 23: Electricity, steam, gas water supply and sewage treatment **Technical function of the substance:** antiscaling agent ; corrosion inhibitor ; plating agent

	registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=50 Tonnage for this use (tonnes/year) Substance supplied to that use: Subsequent service life relevant for that use: yes Link to the subsequent service life: Article service life of phosphate coated items *Related assessment: use assessed in a joint CSR*
IW-2	**Industrial use of zinc bis(dihydrogen phosphate) for production of organic and inorganic zinc compounds (intermediate use)** Further description of the use: Industrial use of zinc bis(dihydrogen phosphate) or Zn(H2PO4)2-formulations in the manufacture of organic substances by mixing the starting materials in a organic-based matrix and other inorganic zinc-substances in a water-based matrix, with potentially filtering and packaging. Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment** **(ERC6a)** - **Discharge via additional off-site sewage treatment plant** **(ERC6a)** Contributing activity/technique for the workers : - **Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions** **(PROC 2)** - **Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions** **(PROC 3)** - **Mixing or blending in batch processes** **(PROC 5)** - **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities**

	(PROC 8a) - **Transfer of substance or mixture (charging and discharging) at dedicated facilities** **(PROC 8b)** - **Transfer of substance or mixture into small containers (dedicated filling line, including weighing)** **(PROC 9)** - **Manufacturing and processing of minerals and/or metals at substantially elevated temperature** **(PROC 22)** - **Handling of solid inorganic substances at ambient temperature** **(PROC 26)** **Product Category used:** PC 9a: Coatings and paints, thinners, paint removers ; PC 14: Metal surface treatment products ; PC 21: Laboratory chemicals ; PC 32: Polymer preparations and compounds ; PC 39: Cosmetics, personal care products **Sector of end use:** SU 8: Manufacture of bulk, large scale chemicals (including petroleum products) ; SU 9: Manufacture of fine chemicals **Technical function of the substance:** intermediate registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=25 Tonnage for this use (tonnes/year) Substance supplied to that use: Subsequent service life relevant for that use: no *Related assessment: use assessed in a joint CSR*
IW-1	**Use of lubricants and greases in open systems.** <u>Further description of the use:</u> ATIEL C(i): Application of lubricant to work pieces or equipment by dipping, brushing or spraying (without exposure to heat), e.g. mould releases, corrosion protection, slideways Contributing activity/technique for the environment : - **Direct discharge to water after on-site treatment**

(ERC4)

-

Discharge via additional off-site sewage treatment plant

(ERC4)

Contributing activity/technique for the workers :

-

Manual filling of lubricant container, i.e. bath or tank

(PROC 8b)

-

Automated filling of lubricant container, i.e. bath or tank

(PROC 8b ; PROC 9)

-

Automated roller application or brushing of coatings

(PROC 10)

-

Spraying onto equipment or article

(PROC 7)

-

Treatment of articles by dipping and pouring

(PROC 13)

-

Draining, maintenance & cleaning of equipment

(PROC 8b)

-

Material storage

(PROC 1 ; PROC 2)

Product Category used: PC 24: Lubricants, greases, release products

Technical function of the substance: lubricating agent

registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant

Tonnage of substance for this use: <=100 Tonnage for this use (tonnes/year)

Substance supplied to that use:

Subsequent service life relevant for that use: no

Related assessment: use assessed in a joint CSR

Table 2.5. Uses by professional workers

	Uses by professional workers
PW-1	**Professional use of fertilizers** Further description of the use: Mixing and loading of fertilizers into the equipment and applying with different techniques (spreading, fertigation etc.) for the crop by farmers, growers and contractors. Contributing activity/technique for the environment : - **Outdoor use - direct application of solid fertilizers to soil; surface spreading** **(ERC8e)** - **Outdoor use - direct application of solid or liquid fertilizers to soil; incorporation, placement, mixing, seed treatment, drip irrigation** **(ERC8e)** - **Outdoor use - application of fertilizers by helicopter** **(ERC8e)** - **Outdoor use - spray application of fertilizers in liquid form; soil surface spreading, sprinkler, pivot, foliar spray, slurry** **(ERC8e)** - **Indoor use of fertilizer (nutrient).** **(ERC8b)** Contributing activity/technique for the workers : - **Handling of fertilizer in stages with significant contact** **(PROC 5)** - **Unloading and loading of fertilizer in non-dedicated facilities, including sampling and cleaning fertilizer residues from the equipment** **(PROC 8a)** - **Unloading and loading of fertilizer in dedicated facilities (e.g. in greenhouses where dedicated engineering controls are in place), including sampling** **(PROC 8b)** - **Packing fertilizers in a dedicated filling line, including weighing**

	(PROC 9) - **Air-dispersive application of fertilizers** **(PROC 11)** - **Chemical analyses of fertilizers** **(PROC 15)** **Product Category used:** PC 12: Fertilisers **Sector of end use:** SU 1: Agriculture, forestry and fishing **Technical function of the substance:** soil amendments (including fertilisers) registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=250 Tonnage (tonnes/year) Subsequent service life relevant for that use: no *Related assessment: use assessed in a joint CSR*
PW-2	**Professional use of zinc bis(dihydrogen phosphate) as a conversion layer agent (phosphate coating)** Further description of the use: Contributing activity/technique for the environment : - **Professional use of zinc bis(dihydrogen phosphate) as a conversion layer agent (phosphate coating)** **(ERC8c)** Contributing activity/technique for the workers : - **Transfer of substance or mixture (charging and discharging) at non-dedicated facilities** **(PROC 8a)** - **Transfer of substance or mixture into small containers (dedicated filling line, including weighing)** **(PROC 9)** - **Roller application or brushing** **(PROC 10)** -

	Non industrial spraying **(PROC 11)** - **Treatment of articles by dipping and pouring** **(PROC 13)** - **Manual activities involving hand contact** **(PROC 19)** **Product Category used:** PC 14: Metal surface treatment products **Sector of end use:** SU 15: Manufacture of fabricated metal products, except machinery and equipment ; SU 17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment **Technical function of the substance:** antiscaling agent ; corrosion inhibitor registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=50 Tonnage (tonnes/year) Subsequent service life relevant for that use: yes Link to the subsequent service life: Article service life of phosphate coated items *Related assessment: use assessed in a joint CSR*

Table 2.6. Article service life

	Article service life
SL-1	**Article service life of phosphate coated items** <u>Further description of the use:</u> Article used by: consumers Substance intended to be released from article: no **Article category related to subsequent service life (AC):** Contributing activity/technique for the environment: - **Article service life of phosphate coated items** **(ERC10a ; ERC11a)** Contributing activity/technique for consumers: -

	Vehicles **(AC 1)** - **Machinery, mechanical appliances, electrical/electronic articles** **(AC 2)** - **Metal articles** **(AC 7)** Contributing activity/technique for the workers: **Technical function of the substance:** antiscaling agent ; corrosion inhibitor ; pigment ; plating agent registration according to REACH Article 10; total tonnage manufactured/imported >=10tonnes/year per registrant Tonnage of substance for this use: <=500 Tonnage (tonnes/year) *Related assessment: use assessed in a joint CSR*