

## General delivery specification for machinery and equipment

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**Document language: English**

**Original language: German**

**Changes:**

This delivery specification is binding for suppliers and must be applied if it is part of the order.

### **1. Scope**

This regulation specifies the general delivery regulations for “machinery and equipment” (hereinafter referred to as “MAE”).

### **2. Obligations**

#### **a) Safety and administrative regulations:**

The “safety and administrative regulations” from the operators of the chemical-parks are part of this order.

<https://www.chempark.de/de/downloads.html>

#### **b) Laws, regulations, EU / EC directives and harmonized standards**

This delivery specification applies to all machine types within the EU. Country-specific legislation and regulations must be taken into account during implementation. If country-specific regulations have higher requirements on MAE, these shall be taken.

Deviations from this delivery specification must always be agreed.

In particular, these are the following laws, regulations and EU /EC directives and harmonized standards including their changes (each in the valid version at the time the order is accepted) and LANXESS provisions:

- (1) Product Safety Law (German: ProdSG)
- (2) Noise and Vibration Occupational Health and Safety Ordinance (German: LärmVibrationsArbSchV)
- (3) Machine regulation (German: 9.ProdSV) / EC Machinery Directive (2006/42/EC)
- (4) Other applicable regulations on the Product Safety Act (German: ProdSVen)
- (5) Law on the electromagnetic compatibility of devices (German: EMVG) and the EU directive 2014/30/EU
- (6) Radio Equipment Law (FuAG) and the EU directive 2014/53/EU
- (7) Relevant harmonized European standards announced by the EU for the product must be observed (see table 2 for examples). Deviations shall be agreed in advance.

- (8) If harmonized standards are not provided, the supplier must implement the state of the art in accordance with national standards or if necessary the international standards or other technical specifications and regulations. The use of these specifications must be coordinated with the Lanxess customer
- (9) The functional safety of machinery shall be performed according to EN ISO 13849-1
- (10) The electrical equipment shall be designed according to IEC/EN 60204-1
- (11) Hydraulic and pneumatic devices as individual units and as part of machines shall be designed according to EN ISO 4413 and EN ISO 4414
- (12) IT security from MAE shall be designed according to IEC 62443
- (13) MAE shall comply with the "state of the art" regarding noise emissions. For a single MAE, the emission sound pressure level shall significantly fall below a value of 80dB (A).
- (14) Requirements from statutory regulations on occupational, fire and environmental protection
- (15) If substances are also necessary for the operation and / or maintenance of the MAE, that fall within the scope of the REACH Regulation (EC Regulation No. 1907/2006), CLP Regulation, (EC Regulation No. 1272 / 2008) or the Biocide Regulation (EU Regulation No. 528/2012), the consent of the customer shall be obtained.
- (16) MAE shall be labeled with the used substances and the quantity.

#### **c) ATEX:**

If the products, components or safety systems are intended to be used in potentially explosive atmospheres the EU directive 2014/34/EU (German regulation: 11. ProdSV) must be considered. The supplier confirmed:

- Certification according to ATEX directive 2014/34/EU shall be provided
- Marking according to article 16 and annex II chapter 1.0.5 (2014/34/EU) shall be provided
- Instructions according to annex II chapter 1.0.6 (2014/34/EU) shall be provided
- EU declaration of conformity and if necessary the EU type-examination shall be provided

#### **d) Motors:**

The electrical systems, electrical equipment and electro technical equipment from machinery and equipment shall fulfill the requirements according to the accident prevention regulations (UVV) DGUV V3 (in the past BGV A3) "Electrical systems and equipment" from the professional association of raw materials and chemical industry (BG RCI) (BGV A3).

For standard three phase current motors the efficiency class IE3 must be used, unless our specifications require otherwise.

The supplier shall fulfill the EU regulation no. 4/2014 / 2009/125/EC (energy-related products, ErP).

For water pumps the regulation no. 547/2012 shall be fulfilled.

For low voltage motors the low voltage directive (2014/35/EU) shall be fulfilled

For three-phase asynchronous motors additional the "VIK recommendation VE 01- Three-phase asynchronous motors - Technical requirements" must be fulfilled. (VIK - Association of the Energy and Power Industry).

For electrical equipment used in an explosive atmosphere (depending on the category of the device), please send us an EU type-examination according to the directive 2014/34/EU annex III and an EU declaration of conformity in digital form together with the order confirmation.

**e) Fittings/Valves:**

Valves with drives and valves without a drive system (if these valves have been put together for a specific application and are intended to be equipped with a specified drive system) are machines according to article 2 a) of the EC Machinery Directive 2006/42/EC and shall be supplied according to this directive.

In order to achieve an universal applicability, these items of equipment shall be classified according to the Pressure Equipment Directive 2014/68 / EU (PED), annex 2. The exclusion according to PED 2014/68/EU article 1 (2) f) i) does not apply.

**f) Pumps:**

Pumps are machines according to article 2 a) of the EC Machinery Directive 2006/42/EC and shall be delivered according to this directive.

If only the connection parts to the place of use and / or the energy source (e.g. pump without motor) of the pump are missing, it is still a machinery according to article 2 a) of the EC Machinery Directive 2006/42/EC.

**3. "Factory Acceptance Test" / Preliminary acceptance and acceptance**

We perform an "Factory Acceptance Test" / Preliminary acceptance of the MAE in the manufacturing plant, unless it is agreed within the order.

The entire scope of the delivery shall be proven between the "Factory Acceptance Test" / Preliminary acceptance. At the "Factory Acceptance Test" / Preliminary acceptance there is no waiver of rights.

The final acceptance generally takes place in our factory and includes the proof of the guaranteed functions and properties and the fulfillment of the delivery regulations according to our order.

#### **4. Documentation**

The documentation shall be supplied in electronic form and paper form. Standards are neutral formats, e.g. PDF (for exceptions see table 1). Exchange formats shall be voted with the Business Unit (scope of offer). The documentation shall be provided (according to the requirements of the Machinery Directive 2006/42/EC) in the official language (or one of the official languages) of the country of use, where the machinery is placed on the market and / or put into operation.

The following documents shall be delivered in advance by email to the technical contact person of the order:

- Installation plan with information about consumption values (e.g. electricity, gas, water, air)
- Circuit diagram including parts list
- Drawings of the workpiece-related equipment (e.g. clamping, loading and unloading devices, special tools, change parts).
- Sectional drawings (positioned)
- Parts lists with position and manufacturer ID numbers
- Spare parts lists
- Instructions / assembly instructions (The machinery shall be supplied with instructions according to annex I No. 1.7.4 EC Machinery Directive. That applies to a partly completed machinery, too)
- Required EU / EC declarations of conformity / declaration of incorporation
- Foundation plan, if necessary

The manufacturer provides the risk assessment (preferably according to EN ISO 12100) in German, unless otherwise agreed in the order. In the case of this agreement, the manufacturer grants LANXESS access on request.

Other documents of the MAE shall be delivered to the shipping address according to the following table:

Table 1

Title	Documents
Documents for maintenance and repair	<ul style="list-style-type: none"> <li>(1) Documents and information on maintenance and repair, including all supplied mechanical and electrical equipment</li> <li>(2) Maintenance plan (if possible with an estimated time expense)</li> <li>(3) Operating instructions and work instructions</li> <li>(4) Spare parts ordering information</li> <li>(5) Spare parts lists, wear parts lists, tool lists (distinction between mechanic / electric)</li> </ul>
Part lists and drawings - Mechanic	<ul style="list-style-type: none"> <li>(1) External parts and standard parts shall be recognizable in the mechanical parts lists (by the manufacturer's name and manufacturer number)</li> <li>(2) all parts lists (including standard assemblies, calibration parts, change parts)</li> <li>(3) All assembly drawings including standard assemblies</li> <li>(4) Wear parts drawings, tool drawings or workpiece-related drawings, test equipment drawings</li> <li>(5) Pneumatic and hydraulic documentation, preferably in PLANEDS,</li> </ul>

Title		Documents
		AutoCAD or COMOS PT, cooling lubricant plans and schemes (6) P&ID flow diagrams, exportable to COMOS PT and 1x as paper printout
Electronic Documentation	Hardware	(1) Electrical documentation preferably in PLANEDS, AutoCAD or COMOS PT and 1x as paper printout (2) Circuit diagram and parts list (structured according to manufacturer's name and number) on CD / DVD, after consultation via network (3) Structured listing of all IT hardware components (PDF format)
	Software	(1) PLC program (2) Function plan, flow chart, function diagram, "cause & effect matrix", function description (3) Programs and parameter sets of intelligent devices including any necessary software, recovery CD when computers are delivered (4) Structured listing of all software versions required for functionality / service in PDF format (5) Provision of all required data for functionality / service on CD / DVD, after consultation via the network (6) Image operating system PC control with description of the restoration (state: putting into service of the machinery)
	Network	(1) Definition of the network connection (e.g. IP addresses)
	Test Technology	(1) Test technology, test methods, test tools
Catalog parts Mechanic/Electric (purchased devices)		(1) Sorted alphabetically by supplier with the technical documentation and instructions
Test certificates		(1) Test report according to IEC / EN 60204-1 (2) Test certificates and / or test books for equipment subject to monitoring (e.g. pressure vessels) (3) Test reports of safety components (4) BUS test protocols (e.g. ProfiBus-DP, ETHERNET) (5) Test certificates for catalog parts (6) Calibration reports (assemblies, production parts) (7) other documents (e.g. acceptance papers, proof of performance)

Manufacturer changes after the "Factory Acceptance Test" at the MAE must be sent to us in writing before final acceptance. The changed documentation with a comprehensible revision must be supplied to us 4 weeks after final acceptance at the latest.

## 5. Laws, regulations, directives and standards

The latest edition (including all changes) applies to all documents.

Table 2

Document number	Title
ProdSG	Product safety law
EMVG	Law on the electromagnetic compatibility of devices
FuAG	Radio Equipment Law
Regulation EU 528/2012	Provision on the market and the use of biocidal products
9.ProdSV	Machine regulation
LärmVibrationsArbSchV	Noise and vibration occupational safety regulations
DGUV Regulation 3	Accident prevention regulations "Electrical systems and equipment"
Regulation EC 1907/2006	Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
Regulation EC 1272/2008	CLP-regulation (Classification, Labelling and Packaging)
2006/42/EC	EG-Machinery directive
2014/34/EU	ATEX product directive
2014/30/EU	EU-directive about electromagnetic compatibility
2014/53/EU	Radio Equipment Directive (RED)
IEC/EN 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
IEC 62443	Security for industrial automation and control systems
EN ISO 4413	Hydraulic fluid power - General rules and safety requirements for systems and their components
EN ISO 4414	Pneumatic fluid power - General rules and safety requirements for systems and their components
EN ISO 12100	Safety of machinery - General principles for design – risk assessment and risk reduction
EN ISO 13849-1	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
EN ISO 13854	Minimum distances to avoid crushing parts of the human body
EN ISO 13857	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 13850	Emergency Stop devices, functional aspects - Principles for design
EN ISO 13855	Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body
EN ISO 13856-1	Safety of machinery - Pressure-sensitive protective devices - Part 1: General principles for the design and testing of pressure-sensitive mats and pressure-sensitive floors
EN ISO 13856-2	Safety of machinery - Pressure-sensitive protective devices - Part 2: General principles for the design and testing of pressure-sensitive edges and pressure-sensitive bars
EN ISO 13856-3	Safety of machinery - Pressure-sensitive protective devices - Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices
EN ISO 14118	Isolation and energy dissipation - Prevention of unexpected start-up
EN ISO 14119	Interlocking devices associated with guards - Principles for design and selection
EN ISO 14120	Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards