Explanations of the rate of risk P, N, H, R

P - Probability of the origination and the existence of risk

1. Occasional
2. Improbable
3. Probable
4. Highly probable
5. Permanent

N - Probability of consequences - seriousness

1. Injury without working incapacity
2. Absence injury (with working incapacity)
3. Serious injury requiring hospitalization
4. Severe injury and injury with permanent consequences
5. Fatal injury

H - Opinion of evaluators

1. Insignificant effect on the level of risk and threats
2. Acceptable effect on the level of risk and threat
3. Slight effect on the level of risk and threat
4. Adverse effect on the level of risk and threat
5. Unacceptable effect on the level of risk and threat

R - Risk rate

- 0 - 3: Insignificant risk
- 4 - 10: Acceptable risk
- 11 - 50: Slight risk
- 51 - 100: Adverse risk
- 101 - 125: Non-acceptable risk

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Two-wheel extension ladder ZD 12	* ladder falling, ladder falling to the side (after losing stability) with the resulting fall of the worker located on the ladder;	2	3	2	12	* modification, levelling or compaction of the terrain; * in the case of using the ladder on soft terrain, use pads under supports with plates, etc.; * the levelling of the side chassis (into the perpendicular position) by the balancer, checking by spirit level; securing the ladder with supports for the levelling of slight roughness of the base and excluding pealing of the ladder on tyres; * do not overload the ladder (see loading diagram); * on the ladder do not take actions that would develop side pressure on the top of the ladder, do not excessively tilt the centre of gravity outside the axis of the ladder; * do not move the ejected ladder and do not lift people or material, do not lift the ladder above persons; * do not use the ladder in a free space in the case of wind speed higher than 38 km/hour(5 degree Bf); Prohibited handling: * lifting the ladder while extending; * continue extending or inserting, if the operator finds an irregularity in the function of the movable mechanisms so that the rope released the loop, node, was removed from the drum or pulleys, etc.; * lifting the ladder at a dangerous distance (in the protective zone) of outdoor electricity lines * lifting the ladder above people; * overloading the ladder above the permitted load-bearing capacity (see maneuvering diagram based on the ladder).
Two-wheel extension ladder ZD 12	* fall of a person from the ladder;	2	3	2	12	* correct procedure when moving up and down; in the case of tilting, hold with at least one hand; * do not tilt to the sides; * if necessary, secure the end of the ladder with personal securing units;

		seriousness				
		P	N	H	R	
Two-wheel extension ladder ZD 12	* hitting a limb between the rungs of the load-bearing and extensible part of the ladder in the event of rolling off the sliding part; * a person falling from the ladder during a failure of the stop units and undesired movement of the extendible part;	2	2	2	8	* before and after ejection of the extendible part, check the correct function of both arresters of the lifting equipment (especially in winter when hardened grease on the pin can cause the blocking of the arresters); * extend the ladder into the required position using the extension part so that the self-operated arresters fit on the cross parts of the load-bearing unit; * correct activity of the self-operated brake inside the lifting and extendible equipment (the brake is activated by the respective arresters in red); * correct tilting procedure (de-arresting of the arrester) according to the manual; * do not slip on the ladder in the case of failure of movable mechanisms, when creating a knot on the rope, removing from the drum or the pulley, etc.; * 1 x half-year, test the function of the self-operated arresters during the slipping out and stopping on each rung, including the opening of the affection of the brake, checking ropes; * 1 x per year test of the strength of the ladder; * undertake repairs professionally;
Single and double ladders	* fall from the ladder by a worker after the loss of stability when using ladders at work;	3	3	2	18	* use ladders only for short time, physically undemanding work when using simple tools; * when moving up and down and working on the ladder, the worker must face the ladder and at all times must have the availability of safe catching and reliable support; * loads with the weight up to 15 kg can be carried on the ladder, unless stated otherwise by special regulations; * ladders used for moving up and down must exceed at the end the fit or enter a platform by a minimum of 1.4 m and this excess can be replaced by solid handles or another solid part of the construction at which the moving person may reliably hold on to; * the declination of the ladder must not be lower than 2.5 : 1, behind the rungs there must be a minimum space of 0.18 m and at the foot of the ladder for access there must be a free space of at least 0.6 m; * the ladder must be positioned so it is stable during the whole period of use; * a portable ladder must be positioned on a stable, firm, sufficiently large, unmovable base so that the rungs are horizontal. The suspended ladder must be fixed and safely secured against movement and swinging unless it is a rope ladder. A rope ladder may only be used for moving up and down;

						* a worker may only work on a ladder at a safe distance from the upper end; for a supporting ladder, the distance is considered to be a minimum of 0.8 m, for double ladders a minimum of 0.5 m from its upper end; * when working on the ladder, in the case where a worker stands on feet at a height of more than 5 m, the worker must be secured by personal working equipment; * the employee ensures that the ladders are inspected in accordance with the user manual; * working from a wooden double ladder (painting work) must only be done by trained employees, if positioned on the platform and there is no risk to the stability of the ladder; * a visual inspection must be conducted before each use of the ladder, (by the employee responsible for maintaining ladders); * regular inspections, no overloading of ladders, correct storage of wooden and metal ladders; * the upper end must be reliably supported by the upper side parts or by fixing the ladder to the stable construction; * when working on the ladder, in cases where a worker stands on the rungs at a height greater than 5 m, the worker must be secured against falls by personal protective working equipment; * the suspending ladder must be safely secured and with the exception of rope ladders, must be secured against movement or swinging; * rope ladders may only be used for moving up and down; * in the case of portable ladders, sliding must be prevented by securing the sides at the upper and lower ends with anti-sliding units or other measures with the respective efficiency * folding and ejecting ladders must be used so that individual parts are secured against movement; * before starting work, portable ladders must be secured against movement; * portable wooden ladders with a length greater than 12 m must not be used; Prohibited handling when working on the ladder: * use of hazardous or other tools, e.g. portable chainsaws, manual pneumatic tools; * use of damaged ladders; * it is not permitted to move up and down on the ladder or to work on it with more than one person; * the ladder must not be used as a passable

						bridge with the exception of cases where it is designated by the manufacturer for such use. * to tilt on the ladder (i.e. deviate the centre of gravity of the body) outside the axis of the ladder, * to carry up and down any load with a weight above 15 kg; * to work on a single ladder with the distance of feet lower than 0.8 m from the end and on a double ladder lower than 0.5 m from the end; * to climb a ladder with damaged and incorrect shoes, with long shoelaces, etc.; * to not dangerously tilt the ladder to the sides and to work near the upper end of the ladder where there is reduced stability of the ladder; * not to use portable ladders with a length greater than 12 m;
Simple and double ladders	* fall of a person from the ladder when moving up and down; * fall of an employee from the ladder due to excessive deviation from the ladder, or positioning of the ladder on an uneven base and support, during overloading and non-proportional loading of the ladder;	3	3	2	18	* use ladders only for short periods and for physically undemanding work when using simple tools; * when moving up and down and working on the ladder, the worker must face the ladder and must be able to hold it safely with reliable support; * it is possible to carry on the ladder, loads with the weight up to 15 kg, unless special regulations do not state otherwise; * ladders used for moving up and down must exceed by the end and fit or enter the platform by a minimum of 1.4 m and this excess can be replaced by solid handles or another solid part of the construction at which the person moving can reliably hold; * the declination of the ladder must not be lower than 2.5 : 1, behind the rungs there must be a minimum space of 0.18 m and at the foot of the ladder for access there must be a free space or at least 0.6 m; * the ladder must be positioned so it is stable throughout the whole period of its use; * a portable ladder must be located on a stable, firm, sufficiently large, unmovable base so that the rungs are horizontal. A suspended ladder must be safely secured against movement and swinging with the exception of rope ladders. A rope ladder must only be used for moving up and down; * a worker may only work on a ladder at a safe distance from the upper end; for the supporting ladder, the distance is considered to be a minimum of 0.8 m; for double ladders a minimum of 0.5 m from the upper end; * when working on the ladder, in the case where a worker stands on the rungs at a height greater than 5 m, the worker must be secured by personal working equipment;

						* the employee must inspect the ladders in accordance with the user manual; * only trained employees may work on a wooden double ladder (painting work) if any movement on the platform and the risk of loss of stability of the ladder is excluded; * the ladder must be inspected before each use of the ladders (conducted by the employee responsible for maintaining ladders); * regular inspections, not overloading of ladders, correct storage of wooden and metal ladders; * the upper end must be reliably supported by the upper side parts or the ladder must be secured to a stable construction; * when working on a ladder, in cases where a worker stands on the rungs at a height greater than 5 m, the worker must be secured against falling by personal protective working equipment; * the suspending ladder must be safe secured and with the exception of rope ladders must be secured against movement or swinging; * a rope ladder must only be used for moving up and down; * in the case of portable ladders, sliding must be prevented by securing the sides at the upper and lower end using anti-sliding units or other measures with the respective efficiency * folding and ejecting ladders must be used so that individual parts are secured against movement; * before starting work, portable ladders must be secured against movement; * portable wooden ladders longer than 12m may not be used; Prohibited handling when working on the ladder: * use of hazardous tools or other tools, e.g. portable chainsaws, manual pneumatic tools; * use of damaged ladders; * it is not permitted to move up and down on the ladder or to work on it by more than one person; * the ladder must not be used as passable bridge with the exception of cases when it is designated by the manufacturer for such use. * to tilt on the ladder (i.e. deviate the centre of gravity of the body) outside the axis of the ladder, * to carry up and down any load with a weight above 15 kg; * to work on a single ladder with the distance of the rungs less than 0.8 m from the end and on a double ladder less than 0.5 m from its end; * to climb on a ladder with damaged and incorrect shoes, with long shoelaces, etc.;

						* to keep the prohibition of dangerous tilting from the ladder to the sides and to work near the upper end of the ladder where there is reduced stability of the ladder; * not to use portable ladders longer than 12 m;
Single and double ladders	* greater demands for securing the stability of aluminium ladders with low weight (greater demands for safe use than wooden ladders);	4	3	2	24	* use ladders only for short time, and for physically undemanding work when using simple tools; * when moving up and down and working on a ladder, the worker must face the ladder and must always be able to safely hold with reliable support; * loads weighing up to 15 kg can be carried on the ladder unless special regulations do not state otherwise; * ladders used for moving up and down must exceed at the end, or when entering a platform, a minimum of 1.4m and this excess can be replaced by solid handles or another solid part of the construction that the moving person may reliably hold; * the declination of the ladder must not be lower than 2.5 : 1, behind the rungs there must be a minimum space of 0.18 m and at the foot of the ladder for access there must be a free space or at least 0.6 m; * the ladder must be located so it is stable throughout the whole period of its use; * a portable ladder must be positioned on a stable, solid sufficiently large, unmovable base so that the rungs are horizontal. The suspended ladder must be securely fixed and secured against movement and swinging with the exception of rope ladders. A rope ladder must only be used for moving up and down; * a worker may only work on a ladder at a safe distance from the upper end; for a supporting ladder, the distance is considered to be a minimum of 0.8 m, for double ladders a minimum of 0.5 m from its upper end; * when working on the ladder, when the worker stands on a rung at a height greater than 5 m, the worker must be secured by personal working equipment; * the employee must conduct inspections of ladders in accordance with the user manual; * working on a wooden double ladder (painting work) must only be done by trained employees and if moving on the platform, the risk of loss of stability of the ladder is excluded; * before each use of a ladder, it must be visually inspected (conduct by the employee maintaining ladders); * regular inspections, not overloading of ladders, correct storage of wooden and metal ladders;

						* the upper end must be reliably supported by the upper side parts or the ladder secured to a stable construction; * when working on a ladder, in cases where a worker stands on a rung higher than 5 m, the worker must be secured against falling by personal protective working equipment; * the suspending ladder must be safely secured and with the exception of rope ladders must be secured against movement or swinging; * the rope ladder must only be used for moving up and down; * in the case of portable ladders, sliding must be prevented by securing the sides at the upper and lower end by the use of anti-sliding units or other measures with the respective efficiency * folding and ejecting ladders must be used so that individual parts are secured against movement; * before starting work, portable ladders must be secured against movement; * portable wooden ladders longer than 12 m must not be used; Prohibited manipulations when working on a ladder: * use of hazardous tools or other tools, e.g. portable chainsaws, manual pneumatic tools; * use of damaged ladders; * it is not permitted to move up and down on a ladder or work on it by more than one person; * the ladder must not be used as a passable bridge with the exception of cases where it is designated by the manufacturer for such use. * to tilt on the ladder (i.e. deviate the centre of the gravity of the body) outside the axis of the ladder, * to carry up and down the load with the weight above 15 kg; * to work on a single ladder with the distance of the feet less than 0.8 m from its end and on a double ladder lower than 0.5 m from its end; * to climb on a ladder with damaged or improper shoes, with long shoelaces, etc.; * to keep the prohibition of dangerous tilting from the ladder to the sides and to work near the upper end of the ladder where there is reduced the stability of the ladder; * not to use portable ladders longer than 12 m;
Single and double ladders	* overturning of the ladder by another person, impact on the ladder by a passing vehicle, etc.;	2	3	2	12	* ensure fencing of the area around the foot of the ladder; * safety marking of the ladder (with red-white colour, targets, etc.);
Single and double ladders	* cracking, breaking the rungs of wooden ladders by the subsequent fall of a worker;	3	3	2	18	* keep ladders in the correct technical condition; * remove damaged ladders from the

						workplace; * do not use damaged ladders; * do not work one above the other and do not move up or down on the ladder with more than one person at the same time; * do not carry on the ladder any loads with a weight above 15 kg, * before using the ladder, visually inspect the ladder (by the employee using the ladder); * regularly check that there is no overloading of the ladder, correctly store wooden ladders;
Double ladders	* moving off the sideboards and falling off a double ladder;	1	1	2	2	* measure for double ladders concerning securing chains, with draw bars, etc. against opening; * use ladders only for short-term, physically undemanding work when using simple tools; * when moving up and down and working on the ladder, the employee must face the ladder and must always have the possibility to firmly hold the ladder and have reliable support; * it is permitted to carry up and down the ladder only loads weighing up to 15 kg, if special legal regulations do not state otherwise; * ladders used for moving up and down must exceed at the end the exit (entrance) platform by at least 1.1 m, and this excess can be replaced by solid handles or another solid part of the construction that the worker can reliably hold when moving upward or downward; * the declination of the ladder must not be less than 2.5 : 1, behind the rungs there must be a minimum space of 0.18 m and at the foot of the ladder for access there must be a free space of at least 0.6 m; * the ladder must be positioned so it is stable during the whole period of its use; * portable ladders must be positioned on a stable, solid, sufficiently large, unmovable base so that the rungs are horizontal. The suspended ladder must be safely secured against movement and swinging with the exception of rope ladders. A rope ladder must only be used for moving up and down; * on a ladder, a worker may only work at a safe distance from the upper end, for the supporting ladder the distance is considered to be a minimum of 0.8 m, for double ladders a minimum of 0.5 m from the upper end; * when working on a ladder, when a worker stands on a rung higher than 5 m, the worker must be secured by personal working equipment; * the employee ensures the inspections of

						the ladders in accordance with the user manual; * only trained employees may climb on a wooden double ladder (for painting work) provided the ladders are moved on to a platform and the ladder is stable; * before each use of the ladder, it must be visually inspected (conducted by the employee maintaining ladders); * regular inspections, no overloading of ladders, correct storage of wooden and metal ladders; * the upper end must be reliably supported by the upper side parts or the ladder secured to a stable construction; * when working on a ladder, in cases where the worker stands on a rung higher than 5 m, the worker must be secured against falling by personal protective working equipment; * the suspended ladder must be safely secured against movement or swinging; * rope ladders may only be used for moving up and down; * in the case of portable ladders, sliding must be prevented by securing the sides at the upper and lower end by the use of anti-sliding units or other measures with the respective efficiency * folding and ejecting ladders must be used so that individual parts are secured against movement; * before starting work, portable ladders must be secured against movement; * portable wooden ladders longer than 12 m must not be used; Prohibited handling when working on a ladder: * use of hazardous tools or other tools, e.g. portable chainsaws, manual pneumatic tools; * use of damaged ladders; * it is not permitted to move up and down on the ladder or for more than one person to work on it; * the ladder must not be used as a passable bridge except when it is designated by the manufacturer for such use. * to tilt on the ladder (i.e. deviate the centre of gravity of the body) outside the axis of the ladder, * to carry up and down any load weighing over 15 kg; * to work on a single ladder with the distance of the feet less than 0.8 m from the end and on the double ladder less than 0.5 m from the end; * to climb on the ladder with damaged and improper shoes, with long shoelaces, etc.; * to keep the prohibition of dangerous tilting from the ladder to the sides and to work near the upper end of the ladder where there is

						reduced stability of the ladder; * not to use portable ladders longer than 12 m;
Double ladders	under-running double ladder, fall by worker	1	1	2	2	* do not support a double ladder, do not use this ladder as a supporting ladder;

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Work and movement of workers at heights and above free depth	* fall of a worker from height - from free unsecured edges of constructions, etc.; * during inspection of equipment; * work and movement of persons on scaffolding; * when taking loads transported by electric winch, crane on unsecured floors; * during the work and movement near freely unsecured holes in peripheral walls (balcony doors, loggia), at stair landings and shoulders, elevator shafts, holes and penetrations in the floors with the size of 25 cm (e.g. for vertical pipes, gaps between floor components) * when climbing and exiting the construction elements of the structure, in the construction of scaffolding;	3	4	2	24	* creation of conditions for ensuring occupational safety on roofs within the supplier documentation - especially preparation or determination of technological or the working procedure; * equipping the construction for working at heights and increasing the workplace (scaffolding, ladders, material, inventory parts) and their sufficient load-bearing capacity, strength and stability; * regular securing of all free edges of the construction where the difference in heights is greater than 1.5 m by one of the following alternatives: a) collective securing - i.e. protective or catching constructions, railings with arresters or another equivalent alternative, free edges of floors, unsecured walls of at least 60 cm high, holes in peripheral walls, lift shafts, free edges of stair arms and platforms, terraces, galleries, balconies, loggias, etc.) or b) personal security (mainly in the case of short-term work) or c) a combination of collective and personal securing; * prevention of access to places on roofs where there is no work designated and where the edges are not secured against falls ; * production of technological procedure, including occupational health and safety when performing more demanding work at heights; if there is no personal securing it is necessary to create the conditions for the use of personal security equipment including specifying in advance the place of binding; (if a technological procedure is not produced, the places of binding /anchoring/ by personal securing is done by the responsible employee); * use of protective and catching constructions (e.g. scaffolding or another equivalent alternative), only when they were terminated, equipped (according to the respective documentation) and after putting into use; * prevention of access to places where there work is not designated and where the free edges are not secured against falls; * securing of workers at heights, where it is not possible to use collective personal securing equipment e.g. when taking loads transported by electric winch, crane on

						unsecured floors in ceiling floors,

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Work and movement of workers at heights and above free depth	* fall of employee when moving up and down on the floor and workplaces at heights;	3	4	2	24	* ensuring security equipment for exits to higher places in the construction (ladders, stairs, platforms); * requirement to use ladders for moving up and down on floors of scaffolding; * keeping the prohibition to jump from scaffolding and moving down on constructions;
Work and movement of workers at heights and above free depth	* fall from unstable constructions and fall of items not designated for work at height or exits at higher workplaces;	4	3	2	24	* equipping of the workplace with suitable items and equipment to increase the height of the work; * prohibition to use unstable and improper items for work and to increase the height of the work (boxes, packages, pallets, barrels, buckets, etc.);
Work and movement of workers at heights and above free depth	* falling through hazardous holes (shafts, gaps and passages in floors with the width above 25 cm);	3	3	2	18	* hazardous holes in floors must be secured by rails or caps with sufficient load-bearing capacity, the gap between the inside edge of the floors of the scaffolding and the adjacent object must not be greater than 25 cm; * holes must be gradually covered using the work procedure at heights; * covers must be secured with stringers or other protective elements against horizontal displacement; * caps must have a sufficient load-bearing capacity with respect to the expected loading;
Work and movement of workers at heights and above free depth	* falling of a person after the breaking, release, destruction of constructions, especially wooden constructions as a result of a defective status, overloading, etc.; * falling of a person after the breaking of wooden elements of auxiliary temporary floors and scaffolding, planks and supporting load-bearing prisms, etc.; * breaking of wooden load-bearing supporting elements of scaffolding or other auxiliary constructions due to the effects of the use of low-quality timber, especially excessive defects, when the scope (most frequently dimensions of visible knots, location and the status) exceeds	2	4	2	16	* selection of appropriate and high-quality materials for load-bearing elements of auxiliary floors, excluding the use of excessively gnarled, rotten and otherwise defective wood (beams, planks); * all load-bearing wooden parts of auxiliary and permanent structures required must be professionally inspected before installation; * reliable securing of individual elements of floors and other temporary auxiliary structures against unwanted movement (fixation, etc.) and the proper and continuous casting of floor boards and individual elements of the scaffolding floor to the stop; * not overloading the floors or other constructions by material, concentration of more persons, etc. (weight of material, equipment, aids, tools, including the number of persons, must not exceed the permitted normative loading of the construction);

	the permitted tolerance and influences the mechanical property of the wood and reduces the strength of the wooden element when stressing for bending, etc.; * falling of a person during the movement or expending effort during a shift or turning the element of the auxiliary working floor, floor parts, caps, etc.;					
Subsystem	**Identification of risk**	**Assessment of risk seriousness**				**Safety precautions**
		P	**N**	**H**	**R**	
Work and movement of workers at heights and above free depth	* falling of items and material from height onto an employee with the risk of a head injury (brick, piece of material transported by crane); * falling of individual items from height; * accidental falling of material from the free edge of the scaffold floor, from the floor of the construction object;	2	3	2	12	* safe placement of material on the floor outside the edge; * material, tools and aids must be placed or stored at heights so they are secured against fall, sliding and blown by wind during the whole period of the placement, and also after termination; * keep the prohibition to suspend tools on parts of clothing, if it is not specially modified for this purpose or if the employee does not use special equipment (belt with clamps, wallets, pickpockets, cases etc.) * securing free edges of floors against the fall of materials and items from free edges; * establishment of catching roofs above the entrance into objects; * specification and fencing of the protective zone under the place of the work at heights excluding the work of persons positioned one above the other under the place of work at heights; * protection of areas under places of work on the roof against the threat from falling items, i.e.: a) specification and fencing of areas at risk (railing minimum height 1.1 m with bars fixed on load-bearing columns with sufficient stability) b) excluding access of persons under workplaces on the roof, or; c) guarding of the areas at risk; The protective zone specified by the area at risk with fencing must have the width from the edge of the workplace or the working floor a minimum of 1.5 metres for the work at heights from 3 m to 10 m inclusive, 2 m for the work at heights of 10 m to 20 m inclusive, 2.5 m for work at heights above 20 m to 30 m inclusive 1/10 of the height of the object for work above 30 m; * for vertical transport of the demolished debris, establish closed chutes;

Steam and hot water boilers with a construction pressure higher than 0.15 MPa and with the temperature of water exceeding the point of boiling at this pressure	* damage to the boiler and equipment, escape of steam, hot water, affection of pressure, threat from pressurised water and mechanical parts during destruction; * affection of burnt gases (temperature, toxic admixtures); * escape of gas (leaks from inlet) - potential explosion with admixture with the air in the area of the boiler room);	1	4	2	8	* ensuring proper maintenance of boilers, monitoring the activity of revision technicians; * ensuring professionally qualified operators; * designation of an employee responsible for the operation of boilers; * keeping regulations, instructions and removing defects; * equipping employees with OOPP; * introduction into operation of only boilers that were fully tested, have documentation and equipment, and the auxiliary devices and accessories correspond to the respective ČSN; * monitoring of the status of the water in the boiler, its maximum permitted temperature; * disconnection of boilers from operation in the case of: - loss of water in water marks also persisting after blowing the watermark and closing the steam supply; - if there is failure of both direct watermarks or all direct watermarks for steam boilers or steam boilers with multi-level evaporation; - in the case of the occurrence of cracks or leaks in the walls of the pressure unit, which even in the case of an increased supply, it is not possible to keep the lowest level of water in the boiler, or that could directly threaten the safety of people and the surroundings; - in the case of serious failure or unpermitted heating of the load-bearing construction of the boiler; - in the case of an explosion of unburnt gases in a fireplace, during which the pressure unit of the boiler could be damaged or need to be replaced; - during the occurrence of hazardous deformations on the walls of the pressure unit of the boiler; - in all cases where the status of the boiler equipment threatens the safety of people or the surroundings; - in cases when it is not possible to ensure the reliable operation of boilers; - in the case of exceeding the maximum permitted parameters (construction pressure, nominal temperature of the overheated steam) for a longer period than stated in the operating regulations; - if there are unusual statutes where the reasons cannot be identified and removed; - in cases stated by the manufacturer of the boiler (see ČSN 07 0710); *conduct preventive and operating maintenance (operating revisions, internal revisions, leak tests, pressure rests); * verify operation of the boilers only by professionally qualified stokers (stoker card

						issued by ITI);

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Pressure tank	* damage to the tank (pressure bottle) and equipment, escape of flammable medium LPG from the bottle, risk of burning vapours LPG, potential explosion, contamination of soil and water; * explosion, fire, burning;	1	4	2	8	* protect underground tanks and underground parts of semi-flushing tanks against corrosion on the basis of asphalt substances or epoxy coating substances; cathodic protection is not necessary in cases where tanks are insulated on the basis of epoxy and coating substances with a protective PE shell; * regular testing of security equipment; * regular testing, inspections, revisions according to the time schedule; * transport of tanks with gas only if: - the tank does not contain air and is hermetically sealed, - the flushed LPG must not contain explosive concentration, * the remainder of the liquid phase is less than 1.5 % of the tank volume; * operation of tanks by professionally qualified employees (instructed, examined, repeatedly after 4 years) according to operating rules; * use OOPP during the work;
Stable pressure bottles (maximum working overpressure higher than 0.07 MPa, containing gas, steam or corrosive poisonous and explosive liquids at any temperature or a liquid at a temperature exceeding boiling point at overpressure 0.07 MPa)	* damage to the bottle and equipment, escape of substance, risk of burning, potential explosion, burns; * destruction of the bottle, pressure wave, threat from mechanical parts - ejection, thrown into the air; * contamination of soil and water;	1	4	2	8	* commission into operation only bottles whose condition does not threaten the safety of people and property for which the stated construction and first pressure tests were conducted, initial revisions and the assessment of conformity and have stated operating documentation, have stated and complete equipment and accessories, including testing that the bottles are correctly placed; * conduct regular revisions and tests, cleaning and maintenance; * fulfilment of the obligations of the operator, i.e. - preparation of operating instructions, - appointment of responsible employee for operation of the bottles, - ensure necessary service and maintenance, - ensure keeping of all regulations, instructions and orders, - equip employees with OOPP, - keep of exact records of bottles, any changes, - keep documentation, records on removing ascertained defects; * the operator of bottles must be older than

						18, capable for the execution of the operation, familiarized and trained in the work of the operator;

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Pressure tank (TNS) compressor air tank (air)	* destruction of the pressure unit TNS with the threatening of persons by dynamic effects of metal parts of the TNS by the affection of pressure;	1	4	2	8	* protect TNS during the operation against damage, not to intervene into the construction of the bottle or supports and feet; * do not place TNS directly on the shell, ensure the correct position and the stability TNS; * correct function of TNS equipment by suitable, correctly selected and placed fittings (pressure meter, safety valve) with the correct setting (according to the passport), permanent maintenance in the correct functional status, regular inspections of the safety valve and resetting of the pressure meter, regular sludge draining; * ensuring the accessibility for operators of safety valve closures, pressure meters; * not overloading the safety valve; * not replacing safety valves with pressure switches in cases where the pressure source is higher than the maximum, working TNS overpressure; * ensure preventive maintenance, regular TNS inspections and the functions of the equipment, regular revisions, maintenance of the documentation – TNS passport; * professional TNS repairs;
Pressure tank (TNS) compressor air tank (air)	injury by electric current;	3	3	2	18	* safe operation of electrical equipment, especially grounding by current or voltage protection, correct connection, coverage, status of conductors, etc.; (also see library "Electrical equipment - injury by electric current")

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Storage of bottles for the transport of gases	* risks arising from gas properties; * escape of flammable gas, explosion of mixture with air, fire, burns to people;	3	3	2	18	* if more than 4 bottles are in the closed warehouse(recalculated to bottles with the inside volume 50 l) to gases, which together represent explosive or hazardous mixture, store bottles separately with the sufficient ventilation; * to create separate sections in an open warehouse for the storage of these bottles that are as a minimum separated by partition walls from wire mesh, etc. for the storage of each type of gas bottle separately; * the floors of warehouses must be produced from fireproof and non-sparking materials; * on the doors of the warehouse a sign must be attached indicating the type of gas, the prohibition to smoke and enter with a naked flame, and the entrance of unauthorized persons; * in the warehouses where full and empty bottles are stored together, the bottles must be stored separately, places for the storage of bottles must be indicated: FULL BOTTLES and EMPTY BOTTLES; * near the warehouse there must not be any shafts, windows and entrances into cellars or other underground areas where gases heavier than air could penetrate, therefore making ventilation difficult; * in a warehouse with flammable and burning supporting gases, there must be suitable fire extinguishers at the entrance * in the warehouse and up to a minimum distance of 5 m from the storage of bottles do not place any flammable substances and do not work with a naked flame without a permit; * secure bottles in the warehouse in a suitable manner against falling over; * do not store bottles together with corrosives; * store empty bottles under the same conditions as full bottles, do not exceed the maximum number of bottles; * in the surroundings of the warehouses there must be special space (room or box) for OOPP, which depending on the character of gas, is first aid equipment, virulence liquidating substances, neutralizing equipment, and spare parts;

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Handling bottles	* fall of bottle, impact and contusions on limbs while handling bottles;	3	3	2	18	* when handling bottles, proceed carefully so as to prevent any falling and damage; * protect bottles against shock, falls, do not throw them; * use two men to carry bottles with the total weight greater than 50 kg (inclusive), it is recommended to use suitable aids and equipment modified for this purpose (holders, hand bonds, suspension trucks, etc.); * secure operating, reservoir and empty bottles in a suitable manner against falling, use chains, drifts, sleeves, stands, etc.;
Emptying of bottles, handling bottles	* undesired escape of gas from a bottle, valves when emptying bottles, handling bottles;	3	3	2	18	* check the status of the bottle before use within the scope of instructions for operation, in the case of a defect, return the bottle back to the filling unit with the indication of the type of defect; * handle the bottles with the utmost care; do not open the bottle valve by force (e.g. with a wrench); * do not speed up the emptying of bottles by heating with a naked flame; * do not connect to pressure valves units with damaged threads and nuts with other threads; * rooms and premises where reserve bottles are located must be ventilated according to fire and hygiene regulations in relation to the types of located gases; * do not place operating and reserve bottles in difficult to access premises; * start taking acetylene from the bottle only after at least one hour after transport to the workplace (this condition is not valid in the case that bottles are transported in the vertical position and are not positioned before use ; * position the bottle when taking acetylene either in the vertical position or tilt with the valve upward at an angle of at least 30° from the horizontal area so that gas does not reach the acetone. Bottles with acetylene contain a dusan porous substance. In this mass is saturated acetone (one bottle contains approximately 6 kg C2H2) and therein under pressure dissolved acetylene as a complicated construction of the bottle so the gas properties require careful handling of the bottles. * after the use of the bottle, close the valve;

						* attach the removable cap to the reserve bottles; * prepare local operating rules for the operation of pressure stations; * when handling bottles with toxic and corrosive gases, at least two medically fit workers must be present; * the pressure station must only be serviced by professionally qualified employees; * do not repair and carry out maintenance of the bottles (this must only be done by an authorized company);

Emptying vessels, handling vessels	* undesired intervention by unauthorized persons, damage to vessel;	3	3	2	18	* after termination of the work activity in temporary workplaces, place the vessels in a safe place protected against intervention by unauthorized persons; * do not place operating and reserve vessels in publicly accessible places; * do not leave vessels transported in vehicles unsupervised in publicly accessible places;
Emptying vessels, handling vessels	* an explosion of the vessel or in the area for technical equipment into which the gas was supplied under pressure from the vessel (material - the shell faces stressing exceeding the strength yield of the sheet);	3	3	2	18	* check the status of the vessel before use by following the operating instructions. If a defect is identified, return the vessel back to the filling unit with the indication of the type of defect; * only connect equipment to the vessel that has been tested and designated for this purpose; * discharge from the vessel into piping or stable vessels and equipment designed for lower overpressure only through a reduction valve designated and marked for the stated type of gas and set for the respective output over-pressure (the reduction valve is not required in cases when it is reliably and safely ensured that there will not be increased pressure in the piping, equipment or stable vessels, above the acceptable limit); * a low-pressure chamber in the reduction valve fitted with a functional pressure meter and safety equipment (a pressure meter for a reduction valve is not required in the case where a reduction valve is part of the pressure station and the pressure meter is installed on the piping in the pressure station), in the pressure station the high-pressure part must be fitted with a pressure meter (the safety equipment for the reduction valve is not required when the piping or the stable vessel into which the gas is discharged are fitted with safety equipment); * locate vessels into the heating bodies and radiant areas so that the surface temperature of the vessels does not exceed 50 °C; from sources of naked flame a minimum of 3 m; * inspection the temperature of the vessels

						according to the specific conditions ; * in the case of fire in the vessel, immediately remove the vessels from the workplace, first the full vessels with flammable gases and cool them if heated above 50 °C; * mark the area where the vessels are located and do not place in one operating room a greater number of vessels than permitted by the ČSN standard;

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Transport of bottles by vehicles	* risk resulting from the properties of the gas (gas escapes) and potential destruction of the bottle during transport;	3	3	2	18	* do not transport bottles together with caustics placed in broken packages (e.g. glass balloons), do not transport oxygen together with fatty substances (e.g. lubricants, fats, etc.); * do not transport bottles together with flammable liquids; * secure bottles on the vehicle against movement in all directions and against damage; * do not use for transport any unlabelled, unsprung or tilting vehicles and passenger cars; * during transport, place the bottles so that the valves of all the bottles are on one side and are accessible; * only transport full and empty bottles with closed valves and screwed on protective caps (does not apply to transport of medical gases for medical devices in rescue and ambulances and for other special cases when, as a rule, it is necessary to take gas from the bottle); * before transporting bottles with toxic, corrosive and flammable gases except acetylene and hydrogen, each bottle valve connection must be by threaded locking nut; * during the transport of bottles with hazardous gases (including gases supporting burning) the load must be accompanied by a person with proven knowledge of the properties of the transported gas and who can handle bottles; * during the transport, they must have a sufficient number of blanks, respective sealing, necessary tools and personal protective working equipment in the case of an accident;
Metal mounted and operated piping	* rapid escape of working substance (liquid or gas) due to leaks in the piping and fittings; * burns according to the type of	1	4	2	8	* maintenance of safety equipment to prevent exceeding of the maximum working overpressure of the piping system or the failure of the safety equipment;

	work flowing substances endangering eyesight; * rapid escape of the working substance from piping or fittings exceeding the maximum working overpressure of the piping system; * accident to the piping due to destruction and deformation of supports, damage and corrosion of hinges, including sleeves on tubes and beams, fixation units, stands, bars, belts, chains and other equipment;					* preventive maintenance, timely removing of defects and failures on pipes and fittings (breaking of the piping as a consequence of freezing of the condensate, excessive corrosion, self release of piping from supports), removing of releases; * professional welds or joints, correct location and termination of fittings, valves, etc.; * correct placement of piping, removing deformations in the piping and in fittings or in the connected equipment (e.g. pumps) and prevention of undesirable influences of excessive cross forces and movements in the piping; * removing of excessive bending of the piping in systems that require drainage declination; * correct use of fittings and parts of pipes, in particular if the piping is loaded by impact loading from pulsations or vibrations; * maintenance of supports and prevention of deformations, damages, replacement of corrosive hinges, including sleeves on tubes and beams, fixation units, stands, bars, belts and other elements; * maintenance of fittings, cleaning, etc.; * specification of the area at risk while conducting tests and prevention of access by unauthorized persons into this area; * use of OOPP for the protection of the eyes and face;
Metal mounted and operated piping	* risk to employees mounting and repairing piping due to undesirable effects of escapes of water, steam and other working substances; * scalding, burning depending on the type of working substance, risk to the eyes;	1	4	2	8	* maintenance of safety equipment to prevent exceeding of the maximum working overpressure of the piping system or the failure of the safety equipment; * preventive maintenance, timely removing of defects and failures on the piping and fittings (piping breaking as a consequence of freezing condensate, excessive corrosion, self-release of the piping from supports), removal of leaks; * professional welds or joints, correct location and termination of fittings, valves, etc.; * reliable closing of the respective fitting that closes the repaired section of the piping before commencement of the work; * correct working procedures; * maintenance of fittings, regular cleaning, etc. * conducting priority pressure tests with liquid; * removing liquid before the use of gases at least before welding and handling in order to contain the minimum volume of gas; * specification of the area at risk when conducting tests and preventing access by unauthorized persons to this area; * use of OOPP for protection of the eyes and

						face;
Metal mounted and operated piping	* injury to limbs during repairs to piping and fittings in narrow premises, improper positions and shafts;	1	4	2	8	* correct placement of piping, preventive maintenance; * correct working procedures; * use of correct tools, aids, assembly products; * ensuring safe access; * use of OOPP;

Subsystem	Identification of risk	Assessment of risk seriousness				Safety precautions
		P	N	H	R	
Metal mounted and operated piping	* fall from height or into depth s when handling control elements, fittings for the piping system;	1	4	2	8	* correct work procedures; * use of the correct tools, aids, assembly products; * for the above-mentioned control elements, to ensure safe access by ladders, platforms, stairs with platforms; * use of equipment for safe control of elements located at heights of more than 1.8 m - 2 m; * maintenance of fittings, regular turning, etc.;
Metal mounted and operated piping	* threat to persons by burning, burning by escaped substances (hot water, steam) due to incorrect termination of safety valves;	1	4	2	8	* maintenance of safe equipment to prevent the maximum working overpressure of the piping system or the failure of the safety equipment; * preventive maintenance; * correct termination of safety valves;
Hazardous substances	* hazardous contact with corrosives (acids and alkalis) irrespective of the type, temperature, concentration and the length of affection on the skin, eyes and mucous membrane (especially dangerous is contact with the eyes), affection by alkalis is more risky (necrosis - tissue is slushy) than acids (coagulation necrosis - variously colored eschar); * during explosion of steam, aerosols and gas - low concentrations in the air: burning in the nose, cold, burning in the throat, hoarseness, cough, choking, burning, conjunctivitis, tearing, redness of the skin - high concentrations in the air: laryngeal edema, shortness of breath, coughing, chest tightness and pain behind the breastbone, pulmonary edema with expectoration of blood to pink frothy sputum, danger of death,	1	1	2	2	General first aid principles First aid is a set of simple and effective measures designed to provide immediate help in the case of the sudden impairment of health. First aid also includes technical measures (disconnection of the electricity current, extrication, stopping the machine etc.). For effective first aid, the necessary resources and utilities must be present in the site - water, which is the most important means of interrupting exposure, and should be available in a sufficient volume. Furthermore, blankets or other textile materials to protect the affected person from cold and adjust the position of the affected person. Other aids are included in the first aid kit that must be in the site with hazardous chemicals and products and the content of which are governed by the type of material used in the work. There are the following principles for first aid principals in regard to poisoning: 1. CHECK THE VICTIM'S CONDITION It is necessary to take into account the importance of maintaining the vital functions of the affected person (respiration,

	corneal damage, the skin is also blistered; * In case of contact with the eyes, burns the tissues around the eyes, severe damage to the cornea (ulcers, perforations), can lead to blindness; * by affecting the skin depending on the concentration and length of action, there can be I to III degree burns, and with a slight disability there is a burning sensation and pain, the skin is red, slightly swollen and at higher concentrations there can be blisters on the reddened skin. High concentrations cause deep necrosis, extensive burns and can kill; * If swallowed burns the lips, mouth, pharynx, with congestion and swelling, the person vomits and has diarrhea, including blood, pain in the esophagus and stomach with the subsequent development of shock (overall slump forces, dyspnea, cyanosis - bluish skin discoloration clearly visible on the lips, earlobes and the fingertips, cold sweat condensation) that can result in death if the person survives the shock stage, a hazardous perforation of the digestive tract and subsequent inflammation of the pericardium or peritoneum, and especially scar narrowing of the esophagus and pylorus (part of the stomach) * inhalation of vapours solvents, hardeners, accelerators, initiators and other auxiliary chemicals, which during hardening of resins are evaporated, inhalation of corrosives; * inhalation of dust mixed with fillers arising from mixing, when handling loose substances - weighing, dosing, spreading; * damage to the skin when working with epoxy resins (affection of hardeners produced on the basis of ammonia); * contact with vapours on the hands, armpits, and face (e.g. as a result of noncontiguous					circulation, consciousness) due to the fact that during respiration and blood circulation, brain cells die within three to five minutes. If the victim does not have vital functions, it is necessary to proceed with an emergency revival: a) Unconsciousness - when the victim does not respond to external stimuli, such as speech, firm touch, communication. Check that the person is breathing and that the heart is functioning. Check for breathing by observing chest movements, listening or attaching a mask to the nose and mouth (exhalation is evident on the mask from the exhaled air). The pulse is best checked on the large arteries, specifically the carotid artery. If the victim is unconscious but breathing and has a cardiac function, they should be placed in the recovery position: the lateral decubitus position, the head of the victim in a half-upright position, supported by hands under their head. This position enables to maintain a clear airway and prevents any aspiration of vomit into the lungs. The victim is to also be protected against hypothermia by covering and observing that there is no vomiting or shortness of breath. b) Not breathing - a condition where there is no breathing or breathing is insufficient and there may also be cardiac arrest. For the victim who is not breathing, but has a preserved heart function artificial respiration is applied from the lungs into the lungs of the victim laying on their back on a hard surface, the rescuer bends the victims head backward to open the airways and sometimes this maneuver can lead to breathing being restored. The tilting of the head is performed so that the savior places his hand under the neck. puts the second hand on the forehead and slightly presses the head in backward direction and lifts the suffered person by hand which is under the neck. If this action is insufficient, open the lower jaw. After cleaning the mouth, remove vomit, dentures (handkerchief, finger), followed by the breathing into the lungs from the lungs, while maintaining the backward bend of the head with the fingers compressing the affected nostril. The rescuer takes a deep breath and exhales air into the mouth of the victim. Observe the chest, the lifting points for the entry of air into the lungs of the patient. The process is repeated 12 to 16 times per minute. Artificial respiration can be administered through a

	OOPP), reflected by the redness; these toxic fumes also cause secondary diseases which are generally slow to heal; * inhalation of vapours solvents or hardeners into the bronchi leads to damage of the respiratory system, and in the final phase permanent damage; in not so serious cases there is bronchial disease (smokers are less tolerant than nonsmokers); * allergic reactions due to the explosion of various substances; * burns or explosions during the use of solvents, flammable liquids, reactive synthetic resins (flammable, similar to most solvents); * the most variable symptoms such as redness, rashes, as well as rhinitis, lacrimation, respiratory difficulties, according to specific substances					resuscitation mask. c) During cardiac arrest, including blood circulation, provide indirect heart massage. The principle is the indirect compression of the myocardium thereby expelling the blood from the heart so that it presses on the sternum against the hard spine. The victim must lie on their back on a hard surface. The resuscitator crosses their arms outstretched and the elbows to apply pressure to the body through the wrist to the lower third of the sternum. The sternum must be compressed about 4-5 cm, for the desired effect and indirect heart massage should be carried out with a frequency of 60 to 80 compressions per minute. d) In the case of not breathing and also cardiac arrest as artificial breathing into the lungs is administered, and indirect heart massage methods described above. With two rescuers / one performs an indirect cardiac massage and the second performs artificial respiration / ratio compressions / heart massage / for artificial respiration 5: 1, i.e. after the fifth chest compression one breath is made. When the rescuer makes only one, this ratio is 15: 3. 2. OBTAIN INFORMATION In particular, it must be determined if there is poisoning or another life-threatening condition (epilepsy, diabetes with hyper or hypo-glycemic shock, high blood pressure, etc.). In the case of poisoning, find out where the poisoning has occurred (home - alcohol, drugs, detergents), employment (what work was being done), whether it is ingestion, inhalation or skin contact, how large was the exposure, how much time has elapsed since exposure. In any case, treatment must be administered. Regardless of the situation, calmly but firmly, do not to succumb to panic, avoid withholding any medicine, and also a large number of high doses of medication. Ensure material for analysis (vomit), note and inform a doctor of the interventions (drugs administered, etc.). If it is not possible to provide a doctor it is immediately necessary to transport the victim to a hospital with an escort capable of providing all necessary information. 3. INTERRUPT EXPOSURE It is necessary to proceed according to the how the poisoning occurred and the condition of the victim: a) affection of skin: During the decontamination of corrosive

						substances and easy skin absorption, protective gloves must be worn. Quickly rinse the affected area, if possible with warm water (about 30 to 35°C) for 10 to 15 minutes, with strong alkalis for at least 1 hour! Remove soaked clothing, watches, ornaments - in the case of corrosive substances, do this directly under a stream of water, do not extend contaminated clothing across the face, and make sure that no dirty water has affected those body parts that were uncontaminated. In the case of contact with the lower limbs, take off shoes and socks and rinse the skin with water spray. After a thorough rinsing, wash with soap and shampoo for oily substances and substances soluble in fat (organic solvents) and again with water thoroughly. Only use a brush on the nails. Where appropriate, cut contaminated nails, hair (with corrosive and toxic substances), and thoroughly wash the toes, behind the ears and in the folds of the skin. Mechanically remove solid particles (white phosphorus). In the case of burns, overlap the affected area with a sterile dressing without using ointments. Beware of hypothermia. Neutralization is not necessary or appropriate and may lead to skin damage through heat generation by chemical neutralization! Inactivate only in special cases. b / contact with the eye: The cornea is particularly sensitive to corrosive substances and organic solvents that can rapidly damage the surface and lead to opaque scars. It is necessary to act quickly to avoid serious damage. Rinsing is done using plenty of water or saline, and in the direction from the inner corner to the outer corner of the eye (the water must not run into the second unaffected eye or to the mouth and nose). Perform eye irrigation for 10 to 15 minutes, never use any neutralizing solutions. For people with contact lenses, first remove the lens. If an affected person has squeezed tight eyelids, it is necessary to use a degree of force to open. Do not use neutralizer solutions that may damage the eye. Always send the victim to an ophthalmologist c / inhalation: Help the victim to move from exposure into fresh air, pay attention to your own safety (artificial respiration). It is advisable to remove vapor soaked clothing, cut hair and nails if they could be a source for further absorption of the poison. For irritants, there

						is a risk of pulmonary edema, and the victim must have complete rest; to protect them from the cold, sit half up so they can inhale oxygen. For persons significantly exposed to substances that are poorly soluble in water (nitrogen oxides, phosgene, ozone) and aliphatic hydrocarbons and oil products – observe for at least 24 hours. d / ingestion: In the case of an unconscious person do not give anything by mouth, do not induce vomiting, put the person into the recovery position and call a doctor. For corrosive substances, do not give anything by mouth, rinse the mouth with water or milk. If the affected person experiences relief and after drinking water or milk can consume a maximum of 1-2 dl these fluids, do not induce vomiting and immediately transport to a hospital. In most cases, serve charcoal - ten times the amount to be eliminated, powder or crushed tablets mixed with 1-2 deciliters of water. Do not give activated charcoal after ingestion of caustic substances without the general toxic effect of substances that only bind a little - iron, cyanides, glycols, alcohols. Milk served during poisoning: divalent mercury salts, fluorides, oxalic acid and oxalates, iodine, copper sulphate. Never give milk: organic solvents, naphthalene, lipid-soluble substances (accelerates the absorption of toxic substances!) Induce vomiting in poison usually within two hours after ingestion, adding up to 10 crushed tablets of activated charcoal in a pint of lukewarm water, or 5 teaspoons of salt. If necessary, irritate the soft palate with a finger or a soft object. For caustic poisoning, do not induce vomiting. Do not induce vomiting in the case of ingestion of small harmful substances, caustic ingestion of substances causing foam (detergents, surfactants), ingestion of substances with a risk of aspiration (petrol, diesel, kerosene), with a somnolent state (drowsiness to somnolence) - risk of aspiration. 4. PROVISION OF URGENT TREATMENT Administer to the victim the appropriate antidotes or substances to reduce the effects of the ingested substances; with organophosphates it is atropine, with cyanides it is amyl nitrate, with iodine it is starch - potato and such like, with hydrofluoric acid it is magnesium sulfate, with potassium permanganate it is

						manganese dioxide, Vitamin C with copper sulfate - creamed egg white, on barium and its compounds it is magnesium sulfate, for bromide it is sodium chloride, in ethylene glycol it is ethanol, in organic solvent it is paraffin oil and such like. Precautions: * Selection of personnel, medical examinations; * Competence, employees on the effects and properties of substances; * Prevent direct skin contact with hazardous substances; * Allocation and use of OOPP for normal use in contact with corrosive chemicals such as rubber gloves, rubber apron, rubber boots, safety goggles, face shield, acid-resistant clothing, a mask with a filter against acid vapors and gases; * OOPP for use in emergency cases - corrosives chloroprene rubber gloves, rubber apron with neck guard, complete protective clothing, heavy breathing apparatus; * Use specific OOPP, special gloves and shoe covers, aprons, boots, etc., for example that are resistant to corrosive (acids, alkalis), thinners, solvents, petrochemical products; * eye protection if necessary, the whole face with OOPP (glasses, face shield), protection of breathing; * ensure ventilation, fresh air; * in the case of allergic reactions, consult a doctor; according to experience it is the better over time to change the job position of the employee; * keep the principles of personal hygiene (do not eat, drink, smoke); * respect the signs and manufacturers' instructions on packaging and the packaging of these substances, for example. "Do not inhale fumes", "Poisonous when inhaled," "Beware of skin contact," "Caution, flammable liquid" and other information (including safety data sheets, etc.); * clean escaped, poured, spilled substances; * train employees on the effects of the substances used; * supervision at work, proper control by managers;