

CHEMOPETROL, a.s. Services Division	Pipeline marking pursuant to the substances that flow through.	N 13 700

The standard is binding for all company units and external companies that propose and conduct pipeline marking for operations pursuant to the given flowing substances.

The units are obliged to acquaint with the standard all external companies that conduct these activities for them and for which the standard is also binding.

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1. General stipulations

1.1 Scope of validity

This standard applies to proposing and implementing pipeline markings for operations pursuant to the given flowing substances. The standard is linked to ČSN 13 0072.

2. Terminology

User - production or operation unit (or department) manager, to whom the device (HIM) has been entrusted to use. In the case of leased devices, the lessee is considered the device user, unless specified otherwise by the given lease contract.

Operator - organization (legal entity) that operates the device and that is responsible for its reliable and safe operation

3. Technical requirements

Replaces: N 13 700 from 12 / 81	Standard administrator: Standardization Department - Services Division	Valid from: 15.9.1998
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3.1 The standard includes complete numeric markings of individual substances (media) that are used in the production chemical, technological and other devices at Chemopetrol, a.s.

3.2 The standard specifies numerical markings of the subgroups of individual company substances in relation to ČSN 13 0072, which only determines the basic group number of the substances that pass through pipelines.

3.3 New substance numbers are defined by the standardization department based on written requests submitted by applicants (users). The request must include an accurate specification of the given substance, including the corresponding group and subgroup numbers, which they request the given substance to be assigned to.

3.4 Marking - the manner and extent of the marking are specified in ČSN 13 0072

3.4.1 Users are obliged to ensure marking of hydrogen sulfide, liquid gases and other mixtures, gaseous carbohydrates and their mixtures, oxygen, acetylene and heating gases.

3.4.2 Furthermore, users are also obliged to ensure marking of internal drinking water, fresh water and cooling water distribution lines in rooms where terminal outlets for social purposes are located. Marking of pipelines with other substances are determined by users.

3.4.3 Marking is conducted using labels. It is recommended to paint all surfaces of the pipelines to DN 100 inside of the buildings using the appropriate color; large pipelines can be marked by color stripes (for their width and number, see ČSN 13 0072).

3.4.4 Pipeline marking by labels must be implemented using numerical marking pursuant to this standard or in verbally (for example, "Hydrogen sulfide" etc.). Individual abbreviations, codes or other additional information for, for example, pipeline marking on pipeline bridges for the purpose of a more detailed identification of the given pipelines - inventory number, abbreviated medium name, division, contact phone - can be stated directly on the pipelines, on labels or on auxiliary signs pursuant to ČSN 13 0072. As a minimum, the labels should be placed in locations marked on the pipeline bridge railing, thus allowing for processing cross-sections through the pipeline bridges with the necessary pipeline information. The location for installing the labels (locations designated for processing cross-sections of the pipeline bridges) should be determined by the given pipeline bridge user.

3.5 Group marking: (pursuant to ČSN 13 0072)

Group number	Name	Color marking
1	water	light green (5014) apart from drinking and fire water
2	steam	silver grey (1010)
3	air	light blue (4400)
4	flammable gases, included liquidized gases	yellow ocher (6600)
5	inflammable gases, included liquidized gases	yellow ocher (6600)
6	acids and substances of an acidic character	purple
7	alkalis and substances of an alkaline character	purple
8	flammable liquids and substances	brown (2320)

9	flammable liquids and substances	brown	(2320)
10	other substances	black	(1999)

3.6 In the codex, hazardous substances are marked with index N and poisonous and life-threatening substances with index **N** ; this marking is only indicative.

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
1	1	reverse	1.101	
1	cooling	glycol	1.102	N
1	2	hot service	1.201	N
1	for	technological condensate	1.202	N
1	technological	works	1.203	
1	purposes	gasworks overflow and regeneration towers	1.204	
1		pressure 1.5 MPa	1.205	N
1		pressure 3.0 MPa	1.206	N
1		pressure 30.0 MPa	1.207	N
1		saturated washing	1.208	N
1		released washing	1.209	
1		circulation	1.210	
1	3	ash	1.301	N
1	for hydro transport	with a stub	1.302	

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
1	4	boiler	1.401	
1	feeding	softened	1.402	
1		power station, feeding	1.404	
1	5	hydrant, fire extinguishing *	1.501	
1	fire	fire extinguishing * * the entire pipeline surface is painted red; alternatively, red stripes are painted on the pipeline surface - see ČSN 13 0072	1.502	
1	6	drinking - pipelines should be marked with a blue stripe	1.601	
1	drinking	carbonic	1.602	
1		hygienic (service)	1.603	
1	7	rain	1.701	
1	waste	sewerage	1.702	
1	chemically harmless	drainage	1.703	

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
1	8	hot waste 40 °C	1.801	N
1	waste	hot waste 60 °C	1.802	N
1	chemically	hot waste 80 °C	1.803	N
1	harmful	boiler sludge	1.804	N
1		boiler blowdown	1.805	N
1		sludge	1.806	N
1		sludge I	1.807	N
1		sludge II	1.808	N
1		waste, sewerage	1.809	N
1		waste, industrial	1.810	N
1		oiled	1.812	N
1		esterified	1.813	N
1		phenol	1.814	N
1		phenol, waste	1.815	N
1		phenol. gasworks	1.816	N
1		extracted	1.817	N
1		ammonia, decocted	1.818	N
1		polluted - 01	1.820	N
1		polluted - 02	1.821	N
1		polluted - 03 - hydrogenation	1.822	N
1		polluted - 03 - distillation	1.823	N
1		polluted - 03 - re-distillation	1.824	N
1		polluted, SL operation	1.825	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
1	8	sulfide	1.826	N
1	waste	waste from petrochemistry I. A	1.827	N
1	chemically	waste from OXO	1.828	N
1	harmful	waste from EB	1.829	N
1		waste, polluted by carbohydrates	1.830	N
1	9 waste, poisonous	condensate from steamed extract, approximately 90 °C (containing xylene - up to 58%)	1.901	N
1	0	fresh	1.001	
1	other	rippled	1.002	
1		clean from sedimentation	1.003	
1		distilled	1.004	
1		condensate - condensed water	1.005	
1		pure condensate	1.006	
1		condensate with oil	1.007	
1		pressure condensate	1.008	N
1		turbine condensate	1.009	
1		crude from lakes	1.010	

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N Ⓝ
1	0	crude from the Elbe	1.011	
1	other	retention condensate	1.012	N
1		demineralized water	1.013	
2	1 low-pressure	up to 0.15 MPa	2.101	N
2	2	0.17 MPa	2.201	N
2	high-pressure	0.25 MPa	2.202	N
2	saturated	0.50 MPa	2.203	N
2		0.80 MPa	2.204	N
2		0.80 - 1.80 MPa	2.205	N
2	3	0.25 MPa	2.301	N
2	high-pressure	0.35 MPa	2.302	N
2	overheated	1.80 MPa	2.303	N
2		3.40 MPa	2.304	N
2		8.00 MPa	2.305	N
2	4 reduced	0.6 MPa	2.401	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N Ⓝ
2	5 condensed	from extract steaming, 100 °C (containing xylene - up to 58%)	2.501	N
2	6 underpressure			
2	7			
2	8			
2	9 waste			
2	0 other			
3	1 fresh	from Záluží	3.101	
3	2 purified	0.45 - 1.20 MPa	3.202	
3	3 pressure	0.45 MPa and to the company network.	3.301	
3		0.45 MPa at the construction site	3.302	
3		15.0 MPa	3.303	N
3		20.0 MPa	3.304	N
3		for rippling the feeding water (0.6MPa)	3.305	

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N Ⓝ
3	3	for washing filters	3.306	
3	pressure	for the PCH I energy block from structure 1532 - 2.8 MPa	3.307	
3	4	hot for heating the convertor	3.401	
3	hot, heating	hot for drying	3.402	
3	5			
3	6			
3	7			
3	8			
3	9	waste	3.901	
3	waste	regeneration for station 47	3.902	N
3		degas from asphalt oxidation	3.903	
3	0 other			

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
4	1	pure, generator + laboratory	4.101	(N)
4	town gas etc.	remote - town gas	4.102	(N)
4		expansion from remote gas	4.103	(N)
4		expansion from SL operation	4.104	(N)
4		expansion from methanol	4.105	(N)
4		heating (heat from preheating devices and furnaces)	4.107	(N)
4		crude, generator	4.108	(N)
4		natural gas	4.109	N
4		2	poor, circulation, from reforming	4.201
4	heating gas	residual, not desulfurized, low-pressure, rich	4.202	N
4		desulfurized, low-pressure, rich	4.203	(N)
4	3			
	acetylene and gases containing acetylene			
4	4	contact gas	4.401	(N)
4	other gases and their mixtures	mixed gas for washing CO ₂	4.402	(N)
4		degas	4.403	(N)
	containing CO	circulation gases from methanol synthesis	4.404	(N)
4		mixed blue water gas	4.405	(N)
4		crude blue water gas	4.406	(N)

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
4	4	syn-gas	4.407	(N)
4	other	crude hydrogen 1.20 MPa	4.408	(N)
4	gases	crude hydrogen 32.0 MPa	4.409	(N)
4	and their	crude hydrogen for methanol	4.410	(N)
4	mixtures	released crude hydrogen	4.411	(N)
4	containing	carbon monoxide	4.413	(N)
4	CO	low-efficiency heating gas, not desulfurized	4.420	(N)
4		low-efficiency heating gas, desulfurized	4.421	(N)
4		high-efficiency heating gas, not desulfurized	4.422	(N)
4		high-efficiency heating gas, desulfurized	4.423	(N)
4	5	dimethyl ether	4.501	N
4	gases	circulation hydrogenation gas I	4.502	N
4	and their	circulation hydrogenation gas II	4.503	N
4	mixtures	circulation gas of ammonia synthesis (expansion gas)	4.504	N
4	without	saturation gas	4.505	N
4	CO	degas from the ammonia reservoirs	4.506	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
4	6	rich gas (pyrolytic)	4.601	N
4	hydrocarbons	liquid gases - hydrocarbons C3 to C4	4.602	N
4	their	propane - propylene coolant	4.603	N
4	mixtures	C2 hydrocarbons	4.604	N
4	and	mixture of benzene vapors and HCl	4.605	N
4	derivates	of the C2 and C3 hydrocarbons	4.606	N
4		propylene	4.607	N
4		butane and its mixtures	4.608	N
4		propane	4.609	N
4		condensate from low-pressure degases from direct hydration	4.610	N
4	7	pure, hydrogenation 32.0 MPa	4.701	N
4	hydrogen	from bottles 15 MPa	4.702	N
4		pure for the synthesis of ammonia and the NRL, PSP, OXO, SL, VÚ branches	4.703	N
4		up to 4.0 MPa	4.704	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
4	8	gaseous ammonia	4.801	(N)
4	other inorganic gases	hydrogen sulfide	4.802	(N)
4	9 waste gases			
4	0 other types	vapors from the sprinkle tower columns	4.001	(N)
5	1	pure nitrogen	5.101	
5	nitrogen	nitrogen 0.45 MPa	5.102	
5	and gases	nitrogen 0.15 MPa	5.103	N
5	containing	nitrogen 32.0 MPa for ammonia	5.104	N
5	N ₂	nitrogen 32.0 MPa in the company network	5.105	N
5		nitrogen 0.02 MPa	5.106	
5		crude nitrogen 400 mm. in sl.	5.107	
5		nitrogen between 0.45 and 3.0 MPa	5.108	N
5		nitrogen for PCH II. - 3.0 MPa to 6.0 MPa	5.110	
5		crude nitrogen, 2.8 MPa for structure 315	5.111	
5	2	5,000 mm of the water column	5.201	
5	oxygen	0.04 MPa	5.202	
Group	Subgroup	Flowing-through substance		

Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
5	2	2.60 MPa	5.203	
5	oxygen	15.0 MPa	5.204	N
5	3	ventilated gases	5.301	
5	peroxide	protective gas 0.04 MPa	5.302	
5	carbonic	carbon dioxide	5.303	
5	and gases	reverse carbon dioxide	5.305	N
5	containing	protective gas 0.45 MPa	5.306	N
5	CO ₂	protective gas CO ₂ - 0.005 MPa reduced	5.307	N
5	4			
	SO ₂ and gases containing SO ₂			
5	5			
	CL and gases containing CL			
5	6			
	other inorganic gases			
5	7			
	gas mixtures			

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
5	8 hydrocarbon derivates	Freon	5.801	
5	9 waste gases			
5	0 other types			
6	1	diluted	6.101	(N)
6	sulfuric acid	concentrated	6.102	(N)
6	2	diluted	6.201	(N)
6	acid	concentrated	6.202	(N)
6	hydrochloric	HCl vapors	6.203	(N)
6	3	diluted	6.301	(N)
6	nitric acid	concentrated	6.302	(N)
6	4	concentrated phosphoric acid	6.401	(N)
6	other inorganic acids and mixtures	diluted phosphoric acid	6.402	(N)
6	5 organic acids	asphalt additives - fatty acids	6.501	

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
6	6 acidic salt solutions	10% FeCl ₃	6.601	N
		40% FeCl ₃	6.602	N
6	7			
6	8			
6	9 waste acids			
6	0 other types			
7	1 inorganic alkalis	liquid ammonia 1.6 MPa	7.101	(N)
7		liquid ammonia 3.0 MPa	7.102	(N)
7		liquid ammonia 6.4 MPa	7.103	(N)
7		ammonia water 0.5 MPa	7.104	(N)
7		ammonia water 1.6 MPa	7.105	(N)
7		ammonia water 30.0 MPa	7.106	(N)
7		sulfite water	7.108	(N)
7		phenolate	7.109	(N)

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
7	2	sodium hydroxide 10%	7.201	(N)
7	solutions	sodium hydroxide 40%	7.202	(N)
7	of strong inorganic alkalis	potassium hydroxide	7.203	(N)
7	3 solution of mild inorganic alkalis			
7	4	pyridine bases	7.401	(N)
7	organic	regenerated or fresh monoethanolamine	7.402	N
7	alkalis	saturated monoethanolamine	7.403	(N)
7		alkalized lye	7.404	N
7	5 solution of strongly alkaline, reacting inorganic substances	sodium solutions	7.501	(N)
7	6	sodium aluminate	7.601	
7	solutions mildly	aluminum hydroxide suspension	7.604	
7	alkaline	ammonium thiotungstate	7.605	(N)
7	reacting	lime sludge	7.606	(N)
7	inorganic	dense lime lye	7.607	(N)

7	substances	thin lime lye	7.608	Ⓝ
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Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
7	6 solutions mildly alkaline reacting inorganic substances	ammonium tungsten	7.609	(N)
7	7 solution of mild organic alkalis			
7	8 waste alkaline, reacting inorganic substances.			
7	9 waste alkaline, reacting inorganic substances.			
7	0 other types			
8	1 liquids	- polycyclic hydrocarbons (toluene, xylene)	8.101	N
8	flash point	liquid intermediate fuel products (side distillate of level III)	8.102	N
8	than 21 °C	liquid intermediate phenolic fuel products (raw material for phenolic fractions)	8.103	(N)
8		light motor fuels - technical petrol (car petrol)	8.104	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
8	1	heavy motor fuels (kerosene)	8.105	N
8	liquids	dichloroethane	8.106	N
8	flash point of	i - n - butyraldehyde	8.107	N
8	which	extraction solution 30 °C (xylene containing 20g/SI and 10g of tar substances)	8.108	N
8	is lower than 21 °C	saturated extraction solution 100 °C (100g/SI and 10g of tar substances)	8.109	N
8		crude oil	8.110	
8		mixture of aromatic hydrocarbons (benzene, ethylbenzene)	8.111	N
8		isopentane and mixtures with isopentane dominance	8.112	N
8		hexane and mixtures with hexane dominance	8.113	N
8		mixture of hexane, polypropylene and possibly also methanol	8.114	(N)
8		C ₅ fraction	8.115	N
8		phenol substances dissolved in toluene (for example, PTBC)	8.118	(N)
8		diethyl ether	8.119	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
8	2	side distillate of level II.	8.201	N
8	liquids	heating mixture	8.202	N
8	flash point	distillation residue	8.204	N
8	of	primary distillation residue	8.205	N
8	which	butyl acetate	8.206	N
8	is higher than	ex.I. - raw material for the production of Ex - 2	8.207	(N)
8	21 °C	i - n - butane	8.208	N
8	and lower than	alcohol for softeners, flotation agents	8.209	N
8	65 °C	C ₉ fraction	8.210	N
8	3	fresh tar	8.301	N
8	liquids	phenols and phenol monatomic products	8.302	(N)
8	flash point	crude oil residue	8.303	N
8	of	formaldehyde	8.305	(N)
8	which	ex.II - crude phenol - B	8.306	(N)
8	is higher than	SKK - crude carbol - cresel	8.307	(N)
8	65 °C	bivalent phenols	8.309	(N)
8	and lower than	foreign tars	8.310	N
8	125 °C	tar substances of the SL operation	8.312	N

8		shares with higher boiling points (octanol)	8.313	
8		ethyl benzene residue	8.314	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
8	3	foaming inhibitors and defoamers	8.315	N
8	liquids	anti-polymerization inhibitors	8.316	N
8	flash point	ethylene glycol	8.317	N
8	of	LTO	8.318	
8	which	oxidized asphalt	8.319	
8	is higher than 65 °C and lower than 125 °C	vacuum residue	8.320	
8	4	methanol	8.401	(N)
8	liquids dissolved in water, flash point lower than 21 °C	synthetic alcohol	8.402	N
8	5	hydrogenation sludge	8.501	
8	technical	stirred tar	8.502	N
8	fats	difene	8.504	(N)
8	and heavy	optol	8.505	(N)
8	oils	pyrocatechine residue	8.506	N
8		lubrication oil	8.509	N
8		heating oil with a flash point over 125 °C	8.511	N

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
8	6 other inorganic liquids and pastes			
8	7	DEAC	8.701	(N)
8	explosive liquids	EADC	8.702	(N)
8	8	organic metals dissolved in flammable liquids	8.801	(N)
8	9 waste liquids			
8	0	liquid sulfur (60% S, 30% tar substances, 10% xylene)	8.001	N
8	other	distillation residue 100°C	8.002	N
8	types	liquid petrochemical additives	8.003	(N)
8		hydrazine	8.004	(N)
8		glycerine	8.005	N
9	1 liquid foods and foodstuff			

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
9	2	sodium nitrate solution	9.201	
9	water	ammonium carbonate	9.202	
9	solutions	calcium chloride	9.203	
9	substances	ferrous sulfate	9.204	
9	of neutral	potassium permanganate	9.205	
9		NaCl water solution	9.206	
9		Na ₂ SO ₃ water solution	9.207	
9		sodium hypochlorite solution	9.208	(N)
9		sodium phosphate solution	9.209	
9		polyelectrolytes	9.210	
9	3 other solution of neutral substances.			
9	4 substances suspended in water			
9	5 substances suspended in another liquid			
9	6			

	aspics and jellies			
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Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
9	7 emulsions and pastes	oil emulsion for controlling machine units	9.701	
9	8 inflammable waste liquids			
9	9 other liquids	waste from neutralization tanks nafloc water solution glycerine water solutions	9.901 9.902 9.903	N (N) N
9	0 other types			
10	1	natural diatomaceous earth - water suspension	0.103	
10	transporting substances	transporting coal dust using a bearing gas (such as CO ₂)	0.104	
10	of various	transporting polymeric substances by air	0.105	
10	phase	transporting polymeric substances by nitrogen	0.106	
10		transporting polymeric substances by water	0.107	
10	2			

Group	Subgroup	Flowing-through substance		
Number	First suffix numbers Name	Name	Complete numerical marking	N (N)
10	3			
10	4			
10	5			
10	6			
10	7			
10	8			
10	9			
10	0			

4. Amendment - list of quoted standards and documents

ČSN 13 0072 Pipelines. Marking pipelines pursuant to the given operation liquids