# SAFETY DATA SHEET OF CHEMICAL PRODUCT

**Entered in Safety Data Sheet Register**

**Registration No** 1 3 6 5 7 8 4 2 . 1 9 . 8 7 8 5 6 dated «28» March 2024

Valid until «28» March 2027

**Association Non-commercial Partnership**
**Coordination and Information Centre of CIS member-states**
**for alignment of regulatory practices**

**NAME**

| | |
|---|---|
| technical (as per regulatory document) | Coal tar for processing |
| chemical (as per IUPAC) | not available |
| commercial | Coal tar for processing of A, B grades, sorts 1 and 2 |
| synonyms | not available |

**OKPD 2 Code** 1 9 . 1 0 . 2 0 . 1 1 0

**EAEU HS Code** 2 7 0 6 0 0 0 0 0 0

**Reference designation and name of the regulatory, technical or information document for the product (GOST, TU, OST, STO, (M)SDS)**

**ТУ 19.10.20-203-00190437-2020 Coal Tar For Processing**

**HAZARD STATEMENT**

**Signal word**: **Danger**

**Brief** (word) **description**: Coal tar is an extremely hazardous substance by impact on the body according to GOST 12.1.007. May be harmful if swallowed, if in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Combustible liquid. May pollute the environment. Very toxic to aquatic life with long lasting effects.

**Detailed description**: in 16 sections of the enclosed Safety Data Sheet

| MAIN HAZARDOUS INGREDIENTS | MAC w.z., mg/m³ | Hazard category | No. CAS | No. EC |
|---|---|---|---|---|
| Coal tar | -/0, 1 (sublimates of coal tar and pitch with average content of benzo(a)pyrene from 0,075 to 0,15%) | 1 | 65996-89-6 | 266-024-0 |
| benzo(a)pyrene | -/0,00015 | 1 | 50-32-8 | 200-028-5 |

**APPLICANT:** JSC Ural Steel (name of organization) Novotroitsk (city)

**Applicant type:** manufacturer, ~~supplier, seller, exporter, importer~~
(strike out whichever is not applicable)

**OKPO Code:** 1 3 6 5 7 8 4 2

**Emergency telephone:** **(3537) 66-65-88, 66-46-22**

**Chief engineer of JSC Ural Steel** _____ (signature) / **A.I. Bedrinov** (full name) /

stamp here

**Safety Data Sheet (SDS) complies with UN recommendations ST/SG/AC.10/30 GHS**

| | | |
|---|---|---|
| **IUPAC** | – | International Union of Pure and Applied Chemistry |
| **GHS** | – | UN recommendations ST/SG/AC.10/30 Globally Harmonized System of Classification and Labelling of Chemicals |
| **OKPD 2** | – | Russian Classification of Products by Economic Activities |
| **OKPO** | – | Russian Classifier of Enterprises and Organizations |
| **EAEU HS Code** | – | Foreign Economic Activity Commodity Nomenclature of the Eurasian Economic Union |
| **No. CAS** | – | substance number in the Register of Chemical Abstracts Service |
| **No. EC** | – | substance number in the Register of European Chemicals Agency |
| **MAC w.z.** | – | maximum allowable concentration of chemical substance in the air of working zone, $mg/m^3$ |
| **Signal word** | – | a word used for drawing attention to the hazardous level of the chemical product and chosen in accordance with GOST 31340 |

# 1 Identification of the chemical product and information about manufacturer and/or supplier

## 1.1 Identification of chemical product

| | |
|---|---|
| 1.1.1 Technical name | Coal tar for processing (hereinafter referred to as tar, substance, product, mixture). [1] |
| 1.1.2 Brief application recommendations (including limitations on application) | Tar is meant for processing into commercial products (oils, fractions, pitch) and other purposes.<br>Tar is produced in two grades and sorts, depending on further use:<br>grade A, sort 1 - for the production of electrode pitch, high-temperature pitch for electric coal products and carbon construction materials - grade B;<br>grade A, sort 2 - for the production of electrode pitch, high-temperature pitch for electric coal products and carbon construction materials - grade G;<br>grade B, sort 1 - for pitch used in the production of pitch coke and coal tar pitch for blast-furnace, taphole, plastic and runner clay, it is allowed to use it to obtain electrode pitch;<br>grade B, sort 2 - for other pitch types production.<br>Do not use as binding materials and in the manufacture of road surfaces, for coating rolled pipes. [1] |

## 1.2 Information about the manufacturer and/or supplier

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|---|---|
| 1.2.1 Full legal company name | Joint Stock Company Ural Steel (JSC Ural Steel) |
| 1.2.2 Address (postal and legal) | 1, Zavodskaya str., Novotroitsk, Orenburg region, 462353 |
| 1.2.3 Telephone, including for emergency consultations and hours of work | (3537) 66-46-22; (3537) 66-65-88<br>(from 06-15 to 15-15 o'clock Moscow time) |
| 1.2.4 E-mail | m.mishchenko@uralsteel.com |

# 2 Hazard(s) identification

**2.1 Hazard level of chemical product in general** (information on hazard classification in accordance with RF legislation (GOST 12.1.007) and GHS (GOST 32419, GOST 32423, GOST 32424, GOST 32425)

A highly hazardous substance in terms of impact on the human body, hazard category1 in accordance with GOST 12.1.007. [2]

**Classification by GHS:**

Chemical product in the form of flammable liquid, category 4

highly toxic chemical product by impact on the body when swallowed, category 5;

Chemical products with highly toxicity by impact on the human body when contact with skin, category 5

Chemical products causing skin corrosion (necrosis)/irritation, category 2;

Chemical product causing serious eye damage/irritation, category 2A;

Chemical product which has sensitizing effect in contact with skin;
Mutagen, category 1B;
Carcinogen, category 1A;
Chemical products affecting reproductive function, category 1B;
Chemical product with highly toxicity for water environments, category 1;
Chemical product with chronic toxicity for water environments, category 1. [3-5]

### 2.2 Information on the warning marking as per GOST 31340

2.2.1 Signal word — **Danger.** [7]

2.2.2 Hazard symbols


*«Exclamation mark»*


*«Hazard for human health»*


*«Hazard for the environment»*

2.2.3 Brief description of hazard (H-phrases)

H227: Combustible liquid;
H303: Maybe harmful if swallowed;
H313: May be harmful if in contact with skin;
H315: Causes skin irritation;
H319: Causes serious eye irritation;
H317: May cause an allergic skin reaction;
H340: May cause genetic defects;
H350: May cause cancer;
H360: May damage fertility or the unborn child;
H410: Very toxic to aquatic life with long lasting effects. [7]

## 3 Composition (information on ingredients)

### 3.1 Information on the product in general

3.1.1 Chemical name (as per IUPAC) — Not available. [1,8]

3.1.2 Chemical name (as per IUPAC — Not available. [1,8]

3.1.3 General description of composition (taking into account the grade range; production method) — It is a liquid product that is a multicomponent mixture of organic compounds, including aromatic hydrocarbons and heterocyclic compounds. Tar is released during the coal carbonization from coke gas as it passes through a series of sequential sections where it is subjected to various processing. The product is a pre-dehydrated mixture of gas collection and refrigeration cycles of coke-chemical production. [1,13,41]

### 3.2 Ingredients

(name, CAS and EC numbers, mass fraction (must be 100% in total), MAC w.z. or Approximate Safe Level of Impact (ASLI) w.z., hazard categories, references to information sources)

Table 1 [1,8,14]

| Ingredients (name) | Mass fraction, % | Hygienic standards in the air of working zone | | CAS No. | EC No. |
|---|---|---|---|---|---|
| | | MAC w.z., mg/m$^3$ | Hazard class | | |
| Coal tar, including: | 100 | -/0,1 (Sublimates of coal tars with average content of benzo(a)pyrene from 0,075 to 0,15% (v) | 1 (C) | 65996-89-6 | 266-024-0 |
| Pitch (highly condensed aromatic carbohydrates) | no less than 50 | | 1 (C) | 65996-93-2 | 266-028-2 |
| Naphthalene | 8 – 14 | 20 (v) | 4 | 91-20-3 | 202-049-5 |
| Phenol+ | 1 – 2 | 1/0,3 (v) | 2 | 108-95-2 | 203-632-7 |
| 3,4-Benzpyrene | 0,6 – 1 | -/0,00015 (a) | 1 (C) | 50-32-8 | 200-028-5 |
| Phenanthrene | 3,4 – 4,9 | 0,8 (a) | 2 | 85-01-8 | 201-581-5 |
| Pyren + | 0,3 – 3,3 | 0,03 (a) | 1 | 129-00-0 | 204-927-3 |
| Anthracene | 0,9 – 1,4 | not identified | none | 120-12-7 | 204-371-1 |
| Fluorene | 1 – 3 | not identified | none | 86-73-7 | 201-695-5 |
| Acenaphthene | 1 – 3,1 | 10 (v + a) | 3 | 83-32-9 | 201-469-6 |
| Carbazole | 1,2 – 2,9 | not identified | none | 86-74-8 | 201-696-0 |
| Diphenylene oxide | 0,5 – 2,2 | 5 (v) | 3 | 101-84-8 | 202-981-2 |
| Unidentified ingredients up to 100 % | | | | | |
| (v) – vapours, (a) – aerosol, v + a – mixture of vapours and aerosols, (C) – carcinogen;<br>(+) – substances requiring the use of special equipment for protection of skin and eyes | | | | | |

## 4 First aid measures

### 4.1 First aid measures

4.1.1 In case of inhalation — Dyspnea, a tickling in the throat, sneezing, coughing, headache, nausea, vomiting, dizziness, excessive motion activity transforming into adinamia, clonic spasms, loss of consciousness, respiratory arrest. There may be different degrees of poisoning, including fatalities, from exposure to high PAH vapours. [1,9,12,13]

4.1.2 In case of skin contact — Skin dryness, cracks, redness, edema, itching. The phenomena are intensified in the light. If hot product comes into contact with it, it may cause thermal burns. [9,12,14]

4.1.3 In case of ingestion — Photophobia, gripes, redness, слезотечение, lacrimation, purulent discharge. [9,13,14]

4.1.4 In case of ingestion — Dyspnea, abdominal and anticardium pains, hypotaxia, convulsions, possible respiratory arrest. [1,8,13,14]

### 4.2 First aid measures for the injured persons

4.2.1 In case of inhalation — In case of light poisoning by coal tar volatile compounds, help the victim go out into fresh air, avoiding cooling in wintertime and exposure to sunshine in any season, loosen tight clothing, give the victim strong tea or coffee in small portions, valerian or motherwort tincture, ascorbic and glutaminic acid.

In case of loss of consciousness – immediately remove

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| | the victim from the source of harmful effects, inhalation of liquid ammonia from the cotton; get medical attention, if required.<br>In case of respiratory standstill – immediately make artificial ventilation of lungs with PPE by mouth-to-mouth or mouth-to-nose method. Continue the procedure up to resumption of breathing, provide the victim with warmth, and admit to the hospital on an emergency basis. [1,8,13] |
| 4.2.2 In case of skin contact | Remove contaminated clothing, wash skin with warm water and soap for 15 minutes, and then apply a dermatological product. Avoid exposure to sunshine. Get medical attention.<br>If there is a thermal burn, submerge the affected skin in cold water immediately, flush with plenty of water, remove clothing that does not stick to the affected area, treat with special anti-burn products, apply an aseptic dressing. Get medical attention. [1,8,9,13] |
| 4.2.3 In case of skin contact | Remove contact lenses by flushing the eye (if possible) and continue flushing with plenty of water or with baking soda solution (2%) in direction from nose. Apply cotton tampons with strong tea. Get medical attention. [1,9] |
| 4.2.4 In case of ingestion | Flush mouth cavity with water. If vomiting occurs, keep your head down, so the stomach contents do not enter the lungs. Increased fluid intake, activated charcoal, salt saline purge. Get medical attention immediately. [1,8,9,13] |
| 4.2.5 Contraindications | Inducing artificial vomiting or injecting emetics is not recommended. Do not give drink or take medication if the person is unconscious. [1,8,9,12] |

## 5 Measures and media for fire and explosion safety

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| 5.1 General characteristic of fire and explosion hazards (according to GOST 12.1.044-89) | Flammable liquid. [1,16,17] |
| 5.2 Indices of fire and explosion hazards (list of indices according to GOST 12.1.044-89) | Flash point is from 80 to 100°C.<br>Ignition point is from 100 to 110°C.<br>Auto-ignition point is from 580 to 590°C. [1,18,19] |
| 5.3 Hazards caused by combustion products and/or thermal decomposition | Smoke. When burning, it exudes toxic products, which cause poisoning (carbon, nitrogen, sulphur oxides; benzo(a)pyrene and formaldehyde, and soot particles). Poisoning symptoms: heart acceleration, increase in arterial pressure, migraines, headache, vertigo, torpor, loss of consciousness, fatal outcome in case of long-time exposure to high concentrations. [1,18] |
| 5.4 Recommended fire-fighting media | For small fires: ground, sand, asbestos covers, hand fire extinguishers. |

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| | For large volume firefighting: foam fire-fighting units generating high expansion foam; powder fire-fighting units. [1,17,19] |
| 5.5 Prohibited fire-fighting media | Compact water jets. Burning product may be ejected or splashed). [1,17] |
| 5.6 Personal protective equipment for fire-fighting<br>(PPE of fire-fighters) | Firefighter's bunker gear (jacket and trousers with detachable heat-insulating lining) complete with firefighting rescue belt, gloves, fire helmet, special protective footwear, breathing apparatus with compressed air. [20-24] |
| 5.7 Specific methods of extinguishing | The product forms a slippery surface if it spilled. [26] |

## 6 Accidental release measures

### 6.1 Precautions against Harmful Effects on People, Environment, Buildings, Structures etc. in Case of Emergencies

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| 6.1.1 General emergency response measures | Isolate the hazardous zone in a radius of no less than 50 m. Enter the hazardous zone using protective means and breathing apparatus. Keep unauthorized people away, taking into account the direction of movement of toxic combustion products. Follow the fire safety measures. No smoking. Give first aid to the injured using personal protective equipment. [26] |
| 6.1.2 Personal protective equipment in emergency situations<br>(PPE of emergency response teams) | In case of fire - fireproof suit complete with self-rescuer SPI-20. [1,26]. |

### 6.2 Emergency Response Procedure

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| 6.2.1 Response to spillage, leakage, overflow:<br>(including response measures and precautions for environment protection) | Eliminate the leakage observing precautions. Protect with an earthen wall in case of heavy leakage. Pump the contents into a proper tank or a tank for draining, observing the liquid mixing conditions. Transfer for processing. Cover the remains with inert material (sand, soil) and collect using non-sparking tools. Contaminated absorbent shall be sent to a waste accumulation site approved by environmental authorities. Prevent substance entry into water bodies, basements and sewerage. All work shall be carried out with the mandatory use of insulating means. [26] |
| 6.2.2 Fire response procedure | Extinguish a fire by water mist with a wetting agent, air-mechanical foam and other means at a safe distance. Cool containers with water from a maximum distance. [26] |

## 7 Handling and Storage

### 7.1 Safety Precautions for Handling Chemical Products

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| 7.1.1 Systems of engineering safety measures | Availability of supply and exhaust and local ventilation. Air analysis of the working area in production premises. Sealing of equipment and apparatus, storage and transportation tanks. Protection of equipment from static electricity accumulation, use of intrinsically safe tools. Discharge points shall be equipped with means of connecting thermal tanks for heating. During loading and unloading, all stationary handling equipment as well as the discharge pipe and the tank shall be grounded. Comply with industrial safety rules. Workplaces shall be equipped with primary fire extinguishing equipment. [6,13,46,49,50] |
| 7.1.2 Measures on environmental protection | Maximum sealing of process equipment, lines; periodic monitoring of the content of hazardous substances in the air of the working area; analysis of industrial effluents for the content of hazardous substances in them in permissible concentrations; air purification of production premises up to permissible standards of the content of hazardous substances before emission into the atmosphere. Landscaping and infrastructure development of the company premises. [1,13] |
| 7.1.3 Recommendations on safe handling and transportation | Coal tar is transported by rail-, motor-or sea transport, through the pipeline.<br><br>The product is transported by rail in specially designated cisterns or tank-containers equipped with heating devices or in packed form in closed wagons in accordance with the Regulations for Carriage of Goods by Rail.<br>Coal tar is transported by road in packed form in covered vehicles or in tank cars equipped with heating devices, in accordance with the Regulations for Carriage of Dangerous Goods by Road.<br>Transportation of tar by sea transport is carried out in packed form in the holds of ships or in oil tank-containers in accordance with the Regulations for Safe Sea Carriage of General Cargoes and GOST 26653.<br>If packaged, barrels are placed on wooden pallets using means for fastening packaged goods and transported in closed wagons.<br>Handling operations shall be mechanized as much as possible. Fill the tank taking into account the permissible use of the capacity and (probable) thermal variations during transportation.<br>The pipelines must be in good condition and checked (once a year) for capacity. Monitor the condition of the oil retainer. All pipeline surfaces covered by sediment products, polymers and unidentified sediments, shall be wetted and cleaned. [1] |

**7.2 Storage Precautions**

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| 7.2.1 Conditions and periods of safe storage life (including guaranteed shelf life, expiration date; incompatible substances and materials during storage) | Tar is stored in closed steel tanks equipped with devices for heating to a temperature not exceeding 80 ºC and excluding contaminant ingress and moisture, as well as in barrels in specially equipped warehouses and sites.<br>Guaranteed shelf life - one year from manufacture date (subject to the conditions of storage and transportation).<br>Incompatible for storage with the following substances: flammable and poisonous gases, inflammable liquids and corrosive substances (acids, caustic alkalis). [1] |
| 7.2.2 Containers and packing (including materials from which they are made) | Storage tanks and transport containers are made of carbon steel. Barrels of steel welded and rolled with corrugations on a type 1 and type 2 body or barrels of steel welded with rolled hoops on a body with a capacity of 200 $dm^3$. [1] |
| 7.3 Household precautions | Tar is not used in the household. [1] |

## 8 Exposure Controls and Personal Protection

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|---|---|
| 8.1 Working zone exposure limits subject to obligatory control (MAC w.z. or ASLI w.z.) | Sublimates of coal tar and pitch with average content of benzo(a)pyrene from 0,075 - 0,15%<br>MAC. = -/0,1 $mg/m^3$ , vapours.<br>If the content of benzo(a)pyrene in coal tar sublimates exceeds 0.3%, then its direct determination in the air of the working area is required:<br>MAC = -/0.00015 $mg/m^3$, aerosol (benzpyrene),<br>MAC = 20/- $mg/m^3$, vapours (naphthalene),<br>MAC. = 1/0,3 $mg/m^3$ vapours (phenol),<br>MAC = 0,8/- $mg/m^3$ aerosol (phenanthrene). [10] |
| 8.2 Measures on keeping hazardous substances within allowable concentrations | Combined extract-and-input ventilation system of working premises, local extract systems. Automation and sealing of technological processes. Monthly cleaning of premises. Control over the content of maximum allowable concentrations in the air of the working area. [1]. |

**8.3 Personal protective equipment for personnel**

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|---|---|
| 8.3.1 General recommendations | Neither eat nor smoke in working zone, follow personal hygiene rules, use PPE correctly. After the work is done, it is necessary to clean the premise.<br>Store work wear in naturally ventilated cabinets. Centralized washing of work wear. Sanitary facilities and amenities shall be provided for personnel working with the products.<br>Persons at least 18 years of age who have passed a preliminary medical examination are allowed to work; introductory and periodic safety briefing. Pregnant and lactating women are not allowed to work. Employees must be trained in the rules of industrial and fire safety and labour |

protection. [1,27,28]

8.3.2 Respiratory protection (types of respiratory protective equipment)

3M Respirators (half masks) with ABEK filters; half masks of FFP2 class filter; 3M gas masks (masks, helmet masks) with forced air supply.
When working in confined spaces, use fresh-air hose breathing apparatus with a mask or self-contained breathing apparatus with compressed air. [29-31,44,45,51,52]

8.3.3 Protective equipment (material, type) (protective clothing, protective footwear, hand protection, eye protection)

Protective clothing: suit for protection against mechanical influences (abrasion).
Eye protection: closed safety glasses.
Hand protection: special gloves, knitted gloves. Protective and preventive dermatological products, fattening creams, ointments and pastes.
Foot protection: special footwear brand Nm. [1,11,32,33,48,53,54,55]

8.3.4 Personal protective equipment for household use

It is not used in the household. [1]

## 9 Physical and chemical properties

9.1 Physical state (aggregate state, colour, odour)

Tar is a dark viscous liquid with specific smell of aromatic hydrocarbons. [1]

9.2 Parameters characterizing the product basic properties (temperature indicators, pH, solubility, n-octanol / water factor and other parameters specific to this type of product)

Table 2 [1]

| Parameter | Values for steel grades and types | | | |
|---|---|---|---|---|
| | A | | B | |
| | 1 c | 2 c | 1 c | 2 c |
| Density at 20 °C, kg/m$^3$, max | 1200 | 1220 | 1220 | 1240 |
| Mass fraction of water, %, max. | 3,0 | 4,0 | 3,0 | 4,0 |
| Mass fraction of substances non-soluble in toluene (a-fraction), %, max. | 8 | 11 | Not determined | |
| Mass fraction of substances non-soluble in quinoline (a-fraction), %, max. | 3 | 4 | Not determined | |
| Mass fraction of ash, %, max.: | 0,08 | 0,10 | 0,08 | 0,10 |
| Solubility | Soluble in toluene, benzene, ester, solvent. Non-soluble in water. | | | |

## 10 Stability and reactivity

10.1 Chemical stability (specify decomposition products for unstable products)

Stable subject to proper handling, storage and transportation conditions. [1,8]

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| 10.2 Reactivity | Around 500 compounds are determined in coal tar. Most of them belong to aromatic hydrocarbons which are characterized by reactions of combination, alkylation, sulfurization, nitration, acetylation, and halogenation. It does not polymerise. [1,13] |
| 10.3 Conditions to Avoid<br>(including hazardous manifestations upon contact with incompatible substances and materials) | Open flame, spark, high temperatures, contact with oxidizers and other non-compatible substances during storage can cause dangerous modifications. [1] |

## 11 Toxicological information

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|---|---|
| 11.1 General description of effects<br>(evaluation of a level of hazardous (toxic) effects on the body and the most typical manifestations of hazard) | According to the impact on the body, it is classified as an extremely hazardous substance, hazard category 1. May be harmful if swallowed. May cause harm if in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause an allergic reaction upon contact with skin. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. [2,7] |
| 11.2 Routes of exposure<br>(inhalation, ingestion, skin contact and eye contact) | Inhalation, ingestion, skin contact and eye contact. [1] |
| 11.3 Target human organs, tissues and systems | Central nervous, respiratory and cardiovascular system, skin integument, ocular mucosa, gastrointestinal tract, liver, lungs, kidneys, adrenal glands, blood system, genitourinary system. [9] |
| 11.4 Information on dangerous to health effects from direct exposure to the product, as well as consequences of this exposure:<br>(irritation of upper respiratory tract, eyes, skin, including skin resorptive and sensitizing effects) | Tar has a serious irritant effect on the mucous membranes of the eyes; upon contact with skin. It does not irritate the upper respiratory tract. It has a skin-resorptive, cutaneous sensitizing effect. [1,8,9,13] |
| 11.5 Information on long-term dangerous to health effects from exposure to the product (influence on reproduction function, carcinogenicity, mutagenicity, cumulativeness and other chronic effects) | The product affects the reproductive function. It has carcinogenic and mutagenic effects. Cumulativeness is moderate. [1,9,13] |
| 11.6 Values of acute toxicity<br>($DL_{50}$, route of entry (intragastric, cutaneous), animal; $CL_{50}$, exposure time (h), animal) | Coal tar:<br>$DL_{50}$ > 2000 mg/kg, intragastric, rats. [8]<br>$DL_{50}$ > 2000 mg/kg, cutaneous, rats. [34] |

## 12 Ecological information

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|---|---|
| 12.1 General description of effects on environment (air, water bodies, soil including observable symptoms of exposure) | Products may pollute the environment. Coal tar sublimates and dangerous substances it gives off can pollute atmospheric air. Pollutants can spread to sufficient distances. Coal tar is toxic for aquatic organisms causing long-term consequences.<br>It leads to the formation of films on the surface of the wa- |

ter, change in the water taste and smell. When released into the atmosphere, it produces a characteristic odour. [1,35]

12.2 Environmental exposure routes

In case of violation of handling and storage rules, in case of uncontrolled waste accumulation, as a result of accidents and emergency situations. [1]

**12.3 The most important characteristics of environmental impact**

12.3.1 Hygienic regulations
(allowable concentrations in atmospheric air, water, including fishery water bodies, soil)

Table 3 [10,37]

| Ingredients | MAC (maximum allowable concentration) in atm. air or ASLI (approximately safe level of impact) in atm. air, mg/m$^3$ (LHI [1], hazard category) | MAC in water[2] or Approximate Allowable Level in water, mg/l (LHI, hazard category) | MAC in fishery[3] or ASLI in fishery, mg/l (LHI, hazard category) | MAC in soil or Approximate Allowable Concentration in soil, mg/kg (LHI, hazard category) |
|---|---|---|---|---|
| Coal tar pitch | 0,1 (ASLI, sublimates of coal pitch containing benzo(a)pyrene from 0,1 to 0,15 %) | not determined | not determined | not determined |
| 3,4-Benzpyrene<м> | -/0,000001/0,000001<б> (res., 1) | 0,00001<к> (s.-t., 1) | not determined | 0,02/ (gen., 1) |
| Naphthalene | 0,007/-/0,003<б> (refl., 4) | 0,01 (org. od., 4) | 0,004 (tox., 3) | not determined |
| Pyrene | 0,001 ASLI | not determined | not determined | not determined |
| Phenol <м> | 0,01/0,006/0,003 (refl.-res., 2) | 0,001 (org. od., 4)<г> | 0,001 (fishery, 3) | not determined |
| Acenaphthene | 0,07 (ASLI) | not determined | not determined | not determined |
| Anthracene | 0,01 (ASLI) | not determined | not determined | not determined |
| Phenanthrene | 0,01 (ASLI) | not determined | not determined | not determined |

<к> – carcinogens;
<б> – skin toxicity;
<м> – chemicals that can also enter water as a result of water treatment and migration from materials and chemical agents;
<г> – The maximum allowable concentration of phenol is indicated for the amount of volatile phenols that give water a chlorophenol odour during chlorination; it refers to water bodies for domestic and drinking water use, subject to the use of chlorine for water disinfection during its treatment at water supply facilities or when determining the conditions for the discharge of wastewater subjected to disinfection by chlorine, in other cases, the content of the amount of volatile phenols in the water of water bodies is allowed in concentrations of 0,1 mg/l;

12.3.2 Ecotoxicity values
(CL, EC, NOEC, etc. for fish (96h.), daphnia magna (48 h.), algae (72 or 96h.), etc.)

For Coal tar:
$EL_{50}$ = 2,8 mg/l, 48 h., Daphnia Magna;

[1] LHI – limiting hazard index (tox. – toxicological; s.-t. – sanitary - toxicological; org. – organoleptic with indication of changes in organoleptic properties of water (od. – changes water odour, tur. – increases water turbidity, col. – colours water, foam – causes foaming, film – creates film on the water surface, taste – changes water flavour, op. – causes opalescence); refl. – reflective; res. - resorptive; refl.-res. - reflective-resorptive, fishery – fish industry (change of commercial qualities of aquatic organisms) ; gen. – general sanitary).
[2] Water of water bodies for household and community use
[3] Water of water bodies for fish industry (including seas)

| | |
|---|---|
| | $LL_{50}$ > 250 mg/l, 96 h., fish;<br>$ErL_{50}$ = 29 mg/l, 72 h., algae. [8] |
| 12.3.3 Migration and transformation in the environment due to biodegradation and other processes (oxidation, hydrolysis or similar) | Migration and transformation data are given for the coal tar ingredients. Naphthalene is biodegradable under the influence of bacterial flora. Benzo(a)pyrene, naphthalene, phenanthrene are oxidizable. Benzene is readily degradable. No bioaccumulative potential has been identified. Moves in soils. It distributes mainly by air. Phenol converts in the ambient environment.[8,39] |

## 13 Disposal considerations

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|---|---|
| 13.1 Safety precautions for handling waste generated during use, storage, transportation | Safety precautions for waste handling are similar to those used when handling the product (see sections 7, 8 of Safety Data Sheet. Use personal protecting equipment (see section 8.3 of Safety Data Sheet). [1] |
| 13.2 Information on locations and methods of neutralization, recovery or disposal of waste, including containers (packing) | Liquid waste shall be burnt by adding it to combustible mixtures and coal tar charge under production conditions. Process containers are used for waste, they are cleaned, steamed, and washed. [1,36] |
| 13.3 Recommendations on disposal of waste from household use | It is not used in household. [1] |

## 14 Transport information

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|---|---|
| 14.1 UN number<br>(according to UN Recommendations on the Transport of Dangerous Goods) | 3082 [42] |
| 14.2 Proper shipping name and name while in shipment | Proper Shipping name – LIQUID, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S.<br>Name in shipment – Coal tar for processing of A, B grades, sorts 1 and 2. [1,42] |
| 14.3 Applicable means of transport | By rail, road, sea. [1] |
| 14.4 Cargo hazard classification according to GOST 19433-88: | Substances hazardous to the environment are not classified according to GOST 19433. [43] |
| - classification code (according to GOST 19433-88 and if shipped by rail) | If shipped by rail: 9063 [25,26]<br>according to GOST 19433: 9123 [43] |
| - hazard pictogram(s) drawing(s) number(s) | none |
| 14.5 Cargo hazard classification according to the UN Recommendations on the Transport of Dangerous Goods: | |
| - class or subclass | 9 [42] |
| - extra hazard | none |
| - UN packing group | III [42] |
| 14.6 Transport Labels<br>(handling signs according to GOST 14192-96) | “Sealed packaging”. [40] |

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|---|---|
| 14.7 Emergency cards<br>(if shipped by rail, sea etc.) | Emergency card No. 906 in case of transportation by rail. [26]<br>Emergency cards in case of transportation by sea : F-A, S-F. |

## 15 Regulatory Information

### 15.1 National Regulations

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|---|---|
| 15.1.1 Russian Federation laws | Federal Laws:<br>FZ “On Environmental Protection”;<br>FZ “On Industrial Safety of Hazardous Production Facilities”;<br>FZ “On Protection of Atmospheric Air”;<br>FZ “On Fire Safety”;<br>FZ “On Production and Consumption Waste”. |
| 15.1.2 Documentation regulating man safety and environmental protection requirements | Not required. [15] |
| 15.2 International conventions and agreements<br>(whether or not the product is regulated by the Montreal Protocol, Stockholm Convention etc.) | Not subject to the Montreal Protocol, the Stockholm Convention [38,47] |

## 16 Additional information

| | |
|---|---|
| 16.1 Information on SDS revision (re-edition)<br>(the following is specified: “SDS is drawn up for the first time” or “SDS is re-registered upon expiry. Previous SDS registration number...” or “Amendments made in clauses…, amendment date…”) | SDS is re-registered upon expiry.<br>Previous SDS registration No. 13657842.19.67129 dated 07.04.2021 |

### 16.2 List of information sources used to draw up the SDS [4]

1. TU 19.10.20-203-00190437-2020 (supersedes TU 2453-203-00190437-2005) Coal-tar for processing. Technical Specification.
2. GOST 12.1.007-76 Occupational safety standards system. Noxious substances. Classification and general safety requirements.
3. GOST 32419-2022 Hazard classification of chemicals. General requirements.
4. GOST 32423-2013 Mixtures classification of hazard for health.
5. GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.
6. GOST 12.1.005-88 Occupational safety standards system. General sanitary requirements for working zone air.
7. GOST 31340-2022 Labelling of chemicals. General requirements.
8. Data from information system ECHA (European Chemicals Agency). [Electronic resource]: Available at – http://echa.europa.eu/.
9. Automated Distributed Data Retrieval System (ARIPS) "Hazardous Substances" of the Russian Register of Potentially Hazardous Chemical and Biological Substances of Rospotrebnadzor. Available at http://www.rpohv.ru/arips/.
10. SanPiN 1.2.3685-21 Hygienic standards and requirements for ensuring safety and (or) harmlessness to humans from environmental factors .
11. GOST 12.4.103-2020 Occupational safety standards system. Special protective clothes, personal means of hands and feet protection. Classification.
12. International programme on Chemical safety (IPCS) International Chemical Safety Cards.
13. Hazardous substances in industry. Handbook for chemists, engineers and doctors. 7th ed., revised and edited by N.V. Lazarev and E.N. Levina Vol. 1. – L., Chemistry, 1976.

[4] Order numbers of information sources are given in each clause of SDS as references

14. Handbook of Coke Chemical Engineer, Vol.3 “Recovery and processing of coke chemical by-products” - Kharkov: Publishing House “INZHEK”, 2009.
15. Uniform list of products (goods) subject to state sanitary and epidemiological supervision (control) at the customs border and customs territory of the Eurasian Economic Union (as amended as of 25.01.2023).
16. GOST 12.1.044-89 (ISO 4589-84) Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of indices and methods of their determination.
17. Korolchenko A.Ya. Fire and explosion hazard of substances and materials and means of their extinguishing. Book 1. - M.,: Association “Pozhnauka”, 2004.
18. Ilichkin V.S. Toxicity of combustion products of polymeric materials. Principles and methods of determination. St. Petersburg: Chemistry, 1993.
19. Fire and explosion hazard of substances and materials and means of their extinguishing. Ref. under ed. of A.N. Baratov and others. - M., Chemistry, 1990.
20. GOST R 53264-2019 Fire equipment. Special protective clothing for fire-fighter. General technical requirements. Test methods.
21. GOST R 53269-2019 Fire equipment. Helmets for firefighters. General technical requirements. Test methods.
22. GOST R 53268-2009 Fire equipment. Fire safety belt. General technical requirements. Test methods.
23. GOST R 53265-2019 Fire equipment. Personal protective equipment of fire-fighter's feet. General technical requirements. Test methods.
24. GOST R 53257-2019 Fire fighting equipment. Face masks of personal respiratory protective devices. General technical requirements. Test methods.
25. Safety rules and emergency response procedure with dangerous goods during their transportation by rail (Novosibirsk: NIIZhT, 1997).
26. Emergency cards for hazardous cargoes transported by railways of the CIS, the Republic of Latvia, the Republic of Lithuania, the Republic of Estonia (as amended on 22.11.2021).
27. P 2.2.2006-05 Occupational hygiene. Guide on Hygienic Assessment of the Factors of the Working Environment and the Work Load. Criteria and Classification of Working Conditions.
28. Order of the Ministry of Health of Russia No. 29n dated 28.01.2021 “On the approval of the Procedure for conducting mandatory preliminary and periodic medical examinations of employees, provided for in part four of Article 213 of the Labour Code of the Russian Federation, a list of medical contraindications to work with harmful and (or) hazardous production factors, as well as work in which mandatory preliminary and periodic medical examinations”.
29. GOST 12.4.294-2015 (EN 149:2001+A1:2009) Occupational safety standards system. Respiratory protective devices. Filtering half masks to protect against particles. General specifications.
30. GOST 12.4.236-2012 (EN 138:1994) Occupational safety standards system. Respiratory protective devices. Fresh air hose breathing apparatus, used with masks and half masks. General technical requirements. Test methods. Marking.
31. GOST 12.4.238-2015 Occupational safety standards system. Respiratory protective devices. Closed-circuit breathing apparatus compressed air type. Technical requirements. Test methods. Marking. Sampling rules.
32. GOST 12.4.137-2001 Safety leather shoe for protection from petroleum, oils, acids, alkalies, non-toxic and explosive dust. Specifications.
33. GOST 12.4.253-2013 (EN 166:2001) Occupational safety standards system. Personal eyes and face protection equipment. General technical requirements.
34. PubChem [Electronic source]. – Available at: https://pubchem.ncbi.nlm.nih.gov/.
35. Grushko Ya.M. Harmful organic compounds in industrial wastewater. Handbook. - L .: Chemistry, 1992.

36. SanPiN 2.1.3684-21 Sanitary and epidemiological requirements for the maintenance of the territories of urban and rural settlements, for water bodies, drinking water and drinking water supply, atmospheric air, soils, residential premises, operation of industrial and public premises, organization and implementation of sanitary and anti-epidemic (preventive) measures.
37. Order of the Ministry of Agriculture of the Russian Federation No.552 dated 13.12.2016 Concerning Approval of Water Quality Standards for Commercial Fishery Water Bodies, including Standards for Maximum Permissible Concentrations of Harmful Substances in Waters of Commercial Fishery Water Bodies.
38. Stockholm Convention on Persistent Organic Pollutants. Ratified by the Federal Law No. 164-FZ dated 27.06.2011.
39. Database on the classification of chemical substances in accordance with the Japan GHS . [Electronic resource]: Access mode – www.safe.nite.go.jp
40. GOST 14192-96 Marking of cargoes.
41. Handbook of Coke Chemical Engineer. ed. Shelkov A.K., Vol.3- M.,: Metallurgy,1966.
42. Regulations on the Transport of Dangerous Goods. Typical rules. Twenty-second revised edition. United Nations, New York and Geneva, 2021.
43. GOST 19433-88 Dangerous goods. Classification and marking.
44. GOST 12.4.296-2015 Occupational safety standards system. Respiratory system protective devices. Filtering gas half masks. General specifications.
45. GOST 12.4.121-2015 Occupational safety standards system. Respiratory system protective devices. Filtering gas masks. General specifications.
46. Order of the Federal Service for Environmental, Technological and Nuclear Supervision No. 512 dated 09.12.2020 On Federal norms and regulations in the field of industrial safety “Safety rules for processes of obtaining and application of metals”.
47. The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted on 16.09.1987.
48. Order of the Ministry of Labour of the Russian Federation No. 767n dated 29.10.2021 “On approval of the Uniform Standard Guidelines for issuing personal protective equipment and detergents”.
49. Federal Law No. 116-FZ dated 21.07.1997 (edition as of 14.11.2023) “On industrial safety of hazardous production facilities”.
50. Federal Law No. 123-FZ dated 22.07.2008 “Technical regulations for fire safety requirements”.
51. GOST 12.4.235-2012 Occupational safety standards system. Respiratory protective devices. Gas filters and combined filters. General technical requirements. Test methods. Marking.
52. GOST 12.4.234-2012 Occupational safety standards system. Respiratory protective devices. Powered filtering devices incorporating a helmet or a hood. General technical requirements. Test methods. Marking.
53. GOST 12.4.252-2013 Occupational safety standards system. Personal protective means of hands. Gloves. General technical requirements. Test methods.
54. GOST 12.4.010-75 Occupational safety standards system. Personal protective means. Special mittens. Specifications.
55. GOST R 12.4.301-2018 Occupational safety standards system. Dermatological personal protective products. General specifications.