PROCHEMICAL GROUP s.r.o.
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Technical (see ND)	Commercial-grade Phthalic Anhydride
Chemical (see IUP AC)	lsobenzofuran-1,3-dione
Commercial	Phthalic Anhydride, Commercial-grade Phthalic Anhydride, PHTHALIC ANHYDRIDE TECHNICAL
Synonym	Phthalic Acid Anhydride; 1,3- isobenzofurandion; benzol-1,2- dicarboxylic acid anhydride; 1,3-dihydro-1,3dioxoizobenzofuran; 1,3-dioxohthalan

HAZARD CHARACTERISTICS: Signal Word: Dangerous!
Brief (description): Highly dangerous substance. Harmful, if swallowed. Causes irreversible effect in the case of eye contact. Causes allergy and irritation in the case of skin contact or if inhaled. Combustible. Contaminates environment if the safety' handling rules are violated. Detailed:
see Material Safe Data Sheet attached on 16 pages

BASIC DANGEROUS COMPONENTS	MACw.z, mg/m^3	Class of hazard	№ CAS	№ EC
Phthalic Anhydride	1,0	2	85-44-9	201-607-5

1. Chemical product identification and manufacturer and/or supplier information

1.1. Chemical product identification

1.1.1. Commercial name:	Commercial-grade phthalic anhydride [3]
1.1.2. Use recommendations (including use 'limitations):	Phthalic anhydride is used in paint and varnish industry for the alkyd resins making, in plastic industry for production of plasticizers and for making of dyes and medical preparations. It is also used in the rubber producing industry. [1]

1.2. Manufacturer and/or supplier information

Manufacturer	Open Joint-Stock Company "Kamtex-Khimprom» 293 Solikamskaya Str., Perm, 614047, Russia
Only representative	**PROCHEMICAL s.r.o.** Nabrezie Sv. Cyrila 47 Prievidza 97101, Slovakia tel.: +421 911 993183 web: www.prochemical.eu mail: sales@prochemical.eu

2. Hazard(s) identification

2.1. General hazard level of the chemical product: (hazard classification information according to the RF laws (GOST 12.1.007) and HGS (after approval))	Highly hazardous substance. 2nd Class of hazard [1,3] Hazard classes according to GHS and CLP: Acute oral toxicity 4 [12,49] Specific system toxicity over target organ - single exposure (irritation ofrespiratory passages 3 [12,49] Skin irritation 2 [12,49]
	Serious eye injury or eye irritation [12,49] Respiratory sensibilization 1 [12,49] Skin sensibilization 1 [12,49]
2.2. General hygienic standards for the product in the working zone air: (maximum allowable concentration of harmful substance in the working zone air (MACw.,J or harmful substances relatively safe exposure levels in the working zone area (RSELw ..))	MACw.z. - 1,0 mg/m^3 [4,37]

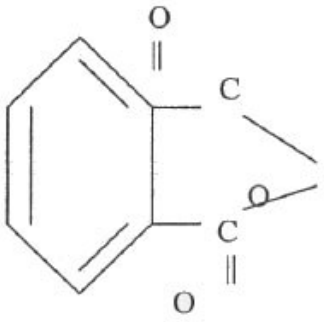
2.3. Marking information (according to GOST 31340-07)

2.3.1. Safety alert symbols: Symbol (pictogram)	 [11 ,29,48]
Signal word:	Danger [11 ,29,48]
Hazard description:	Causes irreversible effect in the case of eye contact. Harmful, if ingested, causes allergy at skin contact and inhalation. Irritates respiratory passages, if inhaled. Causes skin irritation at skin contact. [11,29,48]

2.3.2. Hazard preventive measures:	**Product safety handling:** do not smoke, drink and eat when working with the product; wash your hands thoroughly after work; use protective gloves, clothes and masks. Do not take the means of individual protection out from the working place. If any suspicions of the product exposure arouse then apply for the medical assistance. A void inhalation of vapors and dust. If there is lack of ventilation, please, provide respiratory protection. **Emergency response measures:** Eye contact: thoroughly flush eyes for several minutes. Remove contact lenses if possible. Continue flushing. Get medical assistance immediately. Skin contact: remove contaminated clothes immediately, flush the skin. If any irritations occur, apply for medical assistance. If hypersensitiveness occurs, wash contaminated clothes before wearing. Ingestion: rinse mouth. Get medical assistance immediately. Inhalation: fresh air, rest. If any asthma symptoms or difficult breathing occur, get medical assistance immediately. Keep under lock and key. [1,11,29,48]

3. Composition (information of components)

3.1. General product information

3 .1.1. Chemical name: (according to IUPAC)	Isa benzofuran-1,3-dione: [1]
3.1.2. Chemical formula: - molecular:	$C_8H_4O_3$
- structural:	

<table>
<tr>
<td>3.1.3. General composition description:
(considering range of grades and indicating admixtures and functional additives affecting the product hazard level; production method)</td>
<td>
<table>
<tr><td rowspan="2">Parameter</td><td colspan="2">Grade A standard</td></tr>
<tr><td>Premium grade</td><td>First grade</td></tr>
<tr><td>phthalic anhydride mass fraction</td><td>99,9</td><td>99,7</td></tr>
</table>
The product is obtained as a result of vapor-phase catalytic oxidation of o-xylene with atmospheric oxygen in fixed-bed catalyst according to the low temperature method by Wacker von Hayden. [2]
</td>
</tr>
</table>

3.2. Components

(names, CAS and EC numbers (if available), mass fraction, MACw.z. or RSELw.z., hazard classes, references to data sources)

Components (name, CAS and EC numbers)	Mass fraction, %	MACw.z., mg/m^3	Class of Hazard	Data sources
Phthalic anhydrid CAS 85-44-9 EC 201-607-5	99,7-99,9	1,0	2	3,37 43,44 44
Maleic anhydride, max CAS 108-31-6 EC 203-571-6	0,05	1,0	2	3,37 43,44 44

4. First Aid

4.1. Symptoms

4.1.1. Inhalation intoxication (breathing):	Coughing, headache, short of breath, rhinitis, progression of bronchitis, asthma. [1,5,6]
4.1.2. Skin contact:	Irritation, appearance of red spots, wet ulcers add vesicles similar to second-degree bum. Skin sensibilization. [1,5]
4.1.3. Eye contact:	Irritation, progression of conjunctivitis, irreversible effect may occur. [1,5]
4.1.4. Ingestion intoxication (swallowing):	Weakness, dizziness, headache, coughing, rhinitis, retardation, short breath, pneopneic reflex, heartbeating, nausea, vomiting. [1,5]

4.2. Measures of first aid for victims

4.2.1. Inhalation intoxication:	Fresh air, warmness, rest. If no breath - mouthtomouth artificial ventilation. [1,5]
4.2.2. Skin contact:	Remove the substance with cotton ball, flush with plenty of water for 15 minutes at least. [1,5]

4.2.3. Eye contact:	Flush widely open eyes with plenty of water for 15 minutes at least. Get medical assistance if necessary. [1 ,5]
4.2.4. Ingestion intoxication:	Drink plenty of water, activated carbon, saline purge. [1,5]
4.2.5. Contra indications:	Do not drink milk and-do not eat oils and fats.[1,47]
4.2.6. Firs aid remedies (medicine box):	2 % baking soda solution, activated carbon, saline purge.[1,47]

5. Fire and explosion safety measures and devices

5.1. General fire and explosion hazard specification:	Flammable substance. Floating or settled dust is explosive. [3,5,7]		
5 .2. Fire and explosion hazard parameters: (list of parameters according to GOST 12.1.044 and GOST R 51330.0)	Vapor flammability point	+150°C - +155°C	[1,3,7]
	Vapor self-ignition temperature	+580°C-+584°C	[1,3,7]
	Vapor flash point	+152°C	[1,3,7]
	Flame propagation concentration limits - lower - upper	1,7% 10,4%	[1,3,7]
	Flame propagation temperature limits: - lower - upper	+124°C +194°C	[1,3,7]
for air suspended matters with particle size of74 μm:	Self-ignition temperature	+650°C	[1,3,7]
	Flame propagation concentration limits - lower	15,0 g/m^3	[1,3,7]
5.3. Hazard related to combustion products and/or thermal destruction:	Thermal destruction with carbon oxides generation may occur. [1] Carbon monoxide is a flammable substance resulting to anoxemia. [6, 7] Carbon dioxide is a nonflammable narcotic substance resulting to skin and mucosa irritation. [6]		

5.4. Recommended fire extinguishing medium:	Fog spray water, generated mechanical foam or sprayed water with wetting agents. [1, 7, 47]
	If heavy fire occurs – steam or gases (nitrogen gas, carbon dioxide). [3]
5.5. Prohibited fire extinguishing medium:	Straight water streams. [7]
5.6. Fire extinguishing protective equipment: (fireman protective equipment)	Visored fireman helmet, fire protection suit, heatresistant rubber boots, breathing lifesaving apparatus, fireman canvas wrists. Use insulating airline respirator at heavy fires. [9]
5.7.Specifics of fire fighting:	Enter the fire zone in protective clothes and breating apparatus. Extinguish the fire keeping as far as possible from the burning product. To prevent the combustion of containers located neraby the fire zone containers with the product should be water chilled keeping as far as possible from the containers. Remove containers with the product from the fire zone if possible.[10,47]

6. Accident and Emergency Management

6.1. Measures for prevention of adverse effects over human, environment, buildings, facilities, etc at accidents and emergencies

6.1.1. General measures:	Do not allow the product to spill or leak (see Section 12 herein). [8] Prevent dust accumulation. [7, 49] In the case of accident stop the production according to the Emergency Stoppage Rules. Remove unauthorized personnel. Start the emergency veutilation. Enter the zone of hazard only in protective equipment. Observe fire protection measures. Switch off electric devices. Do not smoke. Remove sources of fire and sparks. Prevent the product discharge to sewage. Give first aid to victims. [41] When spills are removed, measure the product content in the air to determine safety level of MAC.w.z. [15]
6.1.2. Means of individual protection: (of emergency teams and personnel)	Special work clothes (woolen cloth suit, underwear). Rubber boots. Filter gas· mask with DOT-600 canister, goggles, rubber gloves, Hycron gloves, union cloth gloves, woolen cloth mittens. For . emergency teams: alkali and acid resistant dicky TIII(K-3, airline respirator TIIII-1. [19,21,22,25,26,411].

6.2. Accidental and emergency response procedures

6.2.1. Actions to be taken in the event of leakage and spills: (including precautions for environment protection)	Stop leakage observing safety precautions. Pump the product to the safe container. Localize the spill area. Collect crystallized liquid or spills to PE bags with a special intrinsic safety tool and send to thermal deactivation. Keep control over MAC.w.z. and MAC ПДК$_{atm.air}$. Prevent the product discharge to water reservoirs, underground floors, sewage. [2,41] In case of outdoor and transportation spills, please inform Rospotrebnadzor bodies.
6.2.2. Actions to be taken in the event of fire:	See Section 5 herein. Isolate the dangerous zone. Run the wagon to a safety place; isolate the dangerous zone within a radius of 200 meters. Remove fire and sparks sources. Enter fire zone only in fireman protection equipment, keep off the burning containers. Extinguish the fire with fog spray water, generated mechanical foam, water with wetting agents, PF powder. To prevent the combustion of containers located nearby the fire zone containers with the product should be water chilled keeping as far as possible from the containers. Remove containers with the product from the fire zone if possible. [1,2,10,41]

7. Chemical product handling and storage regulations

7.1. Safety precautions when handling with chemical products

7 .1.1. Safety precautions and means of collective protection: (including system of fire and explosion safety measures)	Technological equipment and. packing (containers) should be tight and leak-proof. Production premises should have general suction-and-exhaust ventilation. [2, 3] Avoid dust accumulation. [7,49] Keep away from fire sources and at least 1,5 m far from heating appliances. [7, 14,500] Observe static electricity protection measures. Use intrinsic safety tools. Electric lights and equipment should have explosion-proof design. Technological equipment should be earthed. [18, 20, 30] Do not smoke, do not eat, do not use open fire sources in the working zone. [14] Service personnel should know rule s ·of safety handling with the product and equipped with means of individual protection. When work is over the personnel should have a shower, pass protection clothes for washing, keep protection clothes and equipment is special box. [2,3 , 17, 19 ,2 1,22,25-27] Check the product content in the working zone air as required by regulative documents and a schedule approved by the Chief Engineer and agreed with Rospotrebnadzor. [13,16,31]
7.1.2. Environment protection measures:	Constant control of air medium ($MAC_{atm.air}$). [15,31] Prevent product exposure to the atmosphere, especially discharge to water, sewage and ground. Flushing water should be passed for thermal deactivation. [2 ,32] Nature protection is ensured by strict observance of technological standards provided by requirements to the product production as well as tightness and leak-proofness of technological equipment and packing (containers). [8]
7.1.3. Recommendations for safety transportation:	Packing (containers) should be tight and leakproof. [3,10]

7.2. Rules of chemical products storage

7 .2.1. Conditions and terms of safe storage: (including guaranteed storage life and shelf life)	Flaked product should be kept in vacuum packed packing (PE bags) or special soft containers for bulk products in closed dry ventilated cool warehouses. [1,3] Store away from sources of fire and at least 1,5 m far from heating appliances. [14,50] Melted product should be kept in stainless steel containers under nitrogen breathing. Guaranteed storage life is two months from the date of production. [1,3]
7 .2.2. Substances and materials incompatible for joint storage:	Oxidizers, acids, alkalis. [1]

7.2.3. Recommended packing materials:	Polyethylene (for bags as required by GOST 17811). Alloy steel (grades 1218H10T or 08X22H6T) containers and tanks. Special soft containers. [3]
7.3. Security measures and safety precautions for domestic use:	Do not allowed for domestic use. [3]

8. Exposure control and means of individual protection

8.1. Working zone parameters subject to obligatory control (MACw.z. or RSELw.z.):	$MAC_{w.z.}$ - 1,0 mg/m^3. [1,3,37] TLV (threshold limit concentration, the USA): 1 ppm; 6, 1 mg /m^3 (ACGIH 19 94-19 95). [491]
8.2. Measures to prevent exceeding of allowable concentrations of harmful (hazardous) substances:	Technological equipment and packing (containers) should be tight and leak-proof. Production premises should have general suction-and-exhaust ventilation. [2,3] Check the product content in the working zone air as required by regulative documents and a schedule approved by the Chief Engineer and agreed with Rospotrebnadzor. [13, 16,31]

8.3. Means of individual protection of the personnel

8.3.1. General recommendations	Use means of individual protection of respiratory organs, skin and eyes. Pre-work and routine medical examinations of the personnel working with the product are obligatory. Observe industrial hygiene rules: avoid contacts with the product; do not keep a food, do not eat and smoke in the premises, where the product is used; wash your hands before having a meal, take a shower after work. [2, 3, 17, 19, 21, 22, 25, 27]
8.3.2. Respiratory protection (types of respiratory protective apparatus):	Filter gas mask with DOT-600 canister. [2]
8.3.3. Protective clothing (material, type):	Special woolen cloth suit, underwear, leather high shoes, rubber boots. Special woolen cloth mittens or rubber gloves. [2,3,17,19,21,22,25-27,42]
8.3 .4. Means of individual protection for domestic use:	The product is not intended for domestic use. [3]

9. Physical and chemical properties

9 .1. Physical condition: (appearance, color, odor)	White flakes and powder or melted. Specific odor. [1 ,3]
9.2. Basic properties of the chemical properties and, first of all, hazardous characteristics: (temperatures, pH, solubility, n-octanol/water ration, etc.)	
pH point	2 [l]

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Boiling point, °C	+284 - +295 [1,7]
Melting point, °C	+129 - +134 [1,3,7]
Density, g/cm^3	1,527 [1]
Water solubility at 20°C, mg/dm^3	6000 [1]
Water solubility 50°C, mg/dm^3	17400[1]
Solubility in fats, tetrachloride carbon, pyridine, carbon disulfide, chloroform, benzol, tetrahydrofuran, ethyl acetate, methyl-ethyl ketone, formic acid	Soluble [1]
Solubility in ethanol, diethyl ether	Low soluble [1]
Bulk density, kg/m^3	500 - 700 [1]
Octanol/water partition ration (lg Pow)	- 0,62 [49]
Vapor pressure at 20°C, Pa	< 6,6 [4,50]
Vapor relative density, kg/m^3	5,1 [7,50]

10. Stability and Reactivity

10 .1. Chemical stability: (specify decomposition products if unstable)	The product is stable in abiotic conditions. [1]
10.2. Reactivity:	May be hydrolyzed, reduced, aminated, hydrogenised, etherified, halogenated, sulphrizated; interreacts with phenols and phenol derivatives, urea and copper salts. [1]
10.3. Reactions to be avoided: (including' hazardous effects if contacted with incompatible substances and materials)	Oxidizers, acids, alkalis should be avoided. [1]

11. Toxicity information

11.1. General exposure description: (hazard evaluation if human exposed (toxicity))	Highly dangerous product if human exposed. [1,3]
11.2. Types of exposure: (inhalation, oral, skin and eye contacts)	Inhalation, skin and eye contacts [1,3,6]
11.3. Affected human organs, tissues and systems:	Central and peripheral nervous, respiratory, cardiovascular systems; gastrointestinal tract, liver, kidney, spleen; peripheral blood anatomic composition; eyes. [1]
11.4. Information about dangerous to human health effects in the case of direct contact with the product, and after-effects: (irritation of upper air passages, eyes, skin, including percutaneous action; sensibilization)	Causes strong irritation of skin, eyes-and upper air passages. Has percutaneous action. Results in skin and upper air passages sensibilization (bronchitis, asthma). [1,4]

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11.5. Information about dangerous remote effects to human health: (effects upon reproduction function, carcinogenicity, cumulation, etc.)	The product may have possible effect upon human reproductive function and a fetus progress (troubles of a fetus growth, including fetus death). [1, 49] Mutagenic activity is not found. Cancerigenic effect upon animals is not found, cancerigenic effect upon human was not examined. [1] Ability for accumulation in a human body is moderate. [1]
11.6. Acute toxicity information: (DL_{50}, route (intragastric, cutaneous), animal; CL_{50}, exposure time (hours), animal)	

DL_{50} (mg/kg)	Route	Animal
> 10000	cutaneous	rabbits
1100-4020	intragastric	rats
1500-2200	intragastric	mice*
165	intraperitoneal	mice
30	intratracheal	rats*

*- in the form of emulsion in 2% amyl um solution

CL_{50} (mg/kg)	Time of exposure, hours	Animal
> 210	1	rats

11. 7. Doses (concentrations) with minimum toxic effect:	Limir - 0,54 mg/m^3, inhalation, human (irritation of upper air passages). Limo If - 0,32 mg/m^3, inhalation, human (odor). Threshold limit$_{\text{visual sensitivity}}$ - 0,92 mg/m$_3$, inhalation, human (change of eyes visual sensitivity). Liinch - 3,0 mg/m^3, inhalation, 3 hours/day within 6 months, rats (reduction of weight gain; reduction of nervous system threshold of sensitivity, change of peripheral blood anatomic composition, anatomic change of respiratory organs). Limcr - 0,54 mg/m^3, inhalation, 24 hours within 3 onths, rats (change of nervous system reaction, cholinesterase activity, number of thrombocytes). Limcr - 0,2 mg/m^3, inhalation, 24 hours within 3 onths, rats (reduction of ascorbic acid content and iboflavin synthesis disorder). Maximum concentration (maximum substance concentration, which does not result in biochemical disorders at permanent exposure within unlimited period of time) is 0,5 mg/dm^3. [1] Since in reaction with water phthalic anhydride forms phthalic acid the following information pertains to phthalic acid: Limcr - 0,56 mg/kg, intragastric, 6 months, rats (disorders of conditioned (trained) reflexes and change of thrombocyte number) Limcr - 0,56 mg/kg, intragastric, 6 months, rabbits (change of blood bilirubin, dystrophic and responsive changes of liver, kidney, stomach and intestinal tract) Maximum no effect chronic dose. - 0,056 mg/kg, intragastric, 6 months, rats, rabbits. [1]

12. Environmental Effect Information

12.1. General environmental effect description: (air, water, soil)	Product is stable under ordinary conditions of use. Transforms in environment generating phthalic and benzoic acids. If conditions of use are not observed the product may cause water contamination resulting to change of water sanitary condition and change of water organoleptical properties. May be toxic for water reservoir inhabitants. Causes mechanical soil pollution. Generates dust clouds in the air. [1,4]
12.2. Routes of environment exposure:	If rules of handling, storage and transportation are not observed, if accidents and emergencies occur, the product may have negative effect upon environment.

12.3. Observable exposure symptoms:	The product, if released to water, generates phthalic acid, which changes water organoleptical properties as follows: specific odor and taste appear (threshold concentration for appearance of odor and taste is 56 mg/I (odor and taste); threshold concentration for change of sanitary condition is 0,56 mg/l (biochemical oxygen demand effect). [1]

12.4. The most important characteristics of environmental effect

12.4.1. Hygienic standards:
(allowable concentrations in atmosphere air and water, including fisheries waters, soil)

Components	MACatm.air or RSELatm.air, mg/m^3 (LNV, hazard class)	MACwater[2] or RSELwater, mg/I, (LNV, hazard class)	MAC fish.[3] or RSEL fish., mg/I (LNV, hazard class)	MACorAPC (aproximate permissible concent.) soil, mg/kg (LNV)	Data sources
Phthalic anhydride	MA Cairn air - m.r. 0, 1., sis 0,02 (refl.-res.) Hazard class: 2	MACwater- 0,5. Hazard class: 3 (for phthalic acid)	MACr.sh. - 0,05 (tox.) Hazard class: 3 MACfish. - 3 (tox.) Hazard class: 4 (for phthalic acid) for sea and parts of sea 2 (tox.) Hazard class: 4 (for phthalic acid)	no data	1,33,34,36,38

12.4.2. Ecological toxicity: (CL, EC for fishes, daphnids Magna, alga, etc)	CL_{50}, mg/dm^3	Species	Time of exposure, hours
	561	Brachidanio rerio	168
	313	Leuciscus idus	48
12.4.3. Migration and transformation in environment through biodeterioration or other processes (oxidation, hydrolysis, etc.):	Transforms. Transformation products: phthalic acid, benzoic acid. Easily dissimilated in the environment (50% - 90%). [1]		

13. Recommendations for waste (residues) disposal

13.1. Safety precautions when handling waste resulted from the product usage, storage, transportation, etc.	See Sections 6-8. Safety precautions when handling waste (residues) are the same as when handling the product. Only authorized personnel who knows physical, chemical and toxic parameters of the product and who has been trained and examined for safety precautions is allowed for work with the product. [13,16]

13.2. Places and methods of deactivation, recovery or disposal of waste (material) including packing	Wastes are collected to PE bags with special intrinsic safety tool and sent to thermal deactivation. [2] Reusing of packing (PE bags) is prohibited, the bags should be sent to a landfill. [2] Packing (tanks, drums), if necessary, are deactivated with the direct steam, the flushing water is vacuum pumped and passed to thermal deactivation. [2]
13.3. Recommendations for waste disposal, if the product used in home conditions:	Wastes, as well as the product itself, are not intended for domestic use. [2]

14. Carriage (transportation) information

14.1. UN number (UN): (according to the UN Recommendations on the Transport of Dangerous Goods (general rules), last revision)	2214 [1 ,3,4647]
14.2. Proper shipping name:	Commercial-grade phthalic anhydride.
14.3. Transportation means:	Railway, road and water transport. [3]
14.4. Dangerous goods classification: (according to GOST 19433 and the UN Recommendations on the Transport of Dangerous Goods)	Phthalic anhydride where mass fraction of maleic anhydride is 0,05 % or less is not dangerous and is not subject to classification according to GOST 19433. [10,24,47] Class 8, subclass 8.1. Classification_ code - 81 J2. Hazard symbol 8. [3]
14.5. Transport Marking: (handling symbols; main, additional and information inscriptions)	 Requires additional and information inscriptions, handling symbol "Avoid moisture". [23]
14.6. Group of packing: (according to the UN Recommendations on the Transport of Dangerous Goods)	III [49]
14.7. Road transportation hazards (Code of Emergency Measures):	Phthalic anhydride where mass fraction of maleic anhydride is 0,05 % or less is not dangerous and is not subject to classification according to European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). [101,45] Phthalic anhydride where mass fraction of maleic hanydride is more than 0,05 % is dangerous. [11,45] Class 8. Classification code C4. Group of packing III. Hazard symbol 8. [45]
14.8. Emergency cards: (for railway, sea and other transportation means)	804 [47]

14.9. Hazard information for international goods transportation: (according to SMGS, ADR, RID, IMDG Code, ICAO/IATA, etc, including environmental hazard information and "sea pollutants»)	Phthalic anhydride where mass fraction of maleic anhydride is 0,05 % or less is not dangerous and is not subject to classification according to SMGS and RID. [10,11,45,47,51] Phthalic anhydride where mass fraction of maleic anhydride is more than 0,05 % is dangerous. [10,11,45,47,5 1] Class 8. Classification code C4. Group of package III. Hazard symbol 8. [45,51]

15. International and national regulations

15.1. National regulations

15 .1.1. Laws of the Russian Federation:	Production, processing and transportation of phthalic anhydride must comply with the current laws of the Russian Federation related to: • Environmental protection; • Sanitary and epidemic protection of population; • Technical regulation
15 .1. 2. Documents regulating human and environmental protection requirements: (certificates, sanitary and hygienic reports, licenses)	Phthalic anhydride. Certificate of state registration issued by Russian register of Potentially Hazardous Chemical and Biological Materials: series BT N2 000063 dated 19.07.1994. Information Card of Potentially Hazardous Chemical and Biological Material. Expiration date - unlimited.

15.2. International laws

15.2.1. International laws and conventions: (governed/not governed by the Montreal Protocol, the Stockholm Convention, etc.)	Not governed by the Montreal Protocol, Stockhol and Rotterdam Conventions.

15.2.2. Warning marking approved for the EU countries: (hazard symbols, risk and safety phrases, etc.)	See Section 2.3.1 for Hazard symbols • R-phrases: H302 - harmful if swallowed H315 - causes skin irritation H317 - may cause allergic skin reaction H318 - causes serious eye injury H334 - may cause allergic or asthmatic symptoms or breathing difficulty if inhaled H335 - may cause respiratory tract irritation. [12,48) • S-phrases: Precautions: P201 - take special instructions before use. P261 - avoid dust inhalation. P264 - wash your hands thoroughly after work. P270 - use only in well ventilated premises. P272 - do not take contaminated clothes out of the working zone. P280 - use protective clothing. P281 - in the case of poor ventilation use respiratory protection devices. [12,48]
	Measures: P301+310 - get medical assistance if swallowed. P302+352+361 - in the case of skin contact take off the contaminated clothes immediately and flush skin with water. P304-P340 - take out the victim to the fresh air, let the victim have a rest in the position convenient for breathing. P305+351+338 - rinse your eyes thoroughly within several minutes. Take off contact lenses if available and possible. Continue eye flushing. P333-313 - if any skin irritation or skin rash occurs, get medical assistance. P342+ 311 - if any respiratory symptoms occur, get medical assistance. P362+364 - take off contaminated clothes and wash it before reuse. [12,48] Storage: P405 - Keep under lock and key. [12,48] Disposal: P501 - remove collected wastes to the incineration plant for the following thermal deactivation. [12,48]

16. Additional information

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16.1. Information about revisions of the Material Safety Data Sheet: (please, state: «MSDS first edition» or, in other cases, please, state main reasons of the MSDS revision)	Material Safety data Sheet is issued in connection with the re-registration.

16.2. References

1. Information Card of Potentially Hazardous Chemical and Biological Material. Certificate of State Registration, Series BT № 000063 dd. 19.07.1994, Moscow. Information Card amended as of 15.05.2012.
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