SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Phthalic anhydride liquid
CAS Number:
85-44-9
EC number:
201-607-5
Index number:
607-009-00-4
Registration number 01-2119457017-41-0019

1.2 Relevant identified uses of the substance or mixture and uses advised against

Sector of Use
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU21 Consumer uses: Private households / general public / consumers
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Application of the substance / the mixture
Monomer
Basic material

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:
“ATMOSA” Petrochemie GmbH
Danubiastrasse 21-25
2320 Schwechat
Austria
T: +43 1 7062849
E: office@atmosa.at

Further information obtainable from:
Christoph Pristl
christoph.pristl@atmosa.at

1.4 Emergency telephone number:

PA production plant control room: +43 1 706 28 49 - 31 (available 24 hours a day)

Call the national emergency number!

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4	H302 Harmful if swallowed.
Skin Irrit. 2	H315 Causes skin irritation.
Eye Dam. 1	H318 Causes serious eye damage.

(Contd. on page 2)

(Contd. of page 1)

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.
Additional information: For the wording of the hazard categories, see section 16.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.
Hazard pictograms

GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:
phthalic anhydride
Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
Precautionary statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Based on available data, the classification criteria are not met.
vPvB: Based on available data, the classification criteria are not met.
Determination of endocrine-disrupting properties
The product does not contain substances with endocrine-disrupting properties ≥ 0.1 %(w/w).

(Contd. on page 3)

(Contd. of page 2)

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS No. Description
CAS: 85-44-9 phthalic anhydride
> 99,8 %(w/w)
Identification number(s)
EC number: 201-607-5
Index number: 607-009-00-4

SECTION 4: First aid measures

4.1 Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
In case of discomfort or doubt, seek medical advice.
If unconscious, use a stable lateral position and do not administer anything through mouth.
After inhalation:
In case of unconsciousness place patient stably in side position for transportation.
Seek medical treatment.
Remove person to fresh air and keep comfortable for breathing.
In case of irregular breathing or respiratory arrest provide artificial respiration.
After skin contact:
CONTACT WITH THE HOT MELT: Cooling immediately with plenty of water. Do not remove product crusts which may have formed neither forcibly nor by applying any solvents to the skin involved. In order to obtain medical care for possible burns and for a smooth cleansing of the skin, seek medical advice immediately.
After eye contact:
Rinse opened eye for several minutes under running water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Consult an ophthalmologist or eye clinic immediately.
After swallowing:
Rinse out mouth and then drink plenty of water.
Do NOT induce vomiting.
Call a doctor immediately.
4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
4.3 Indication of any immediate medical attention and special treatment needed
Depending on the condition of the patients, the doctor must assess the symptoms and the overall general condition.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

(Contd. on page 4)

(Contd. of page 3)

For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:
COx
Dust can form explosive mixtures with air.
Forms phthalic acid with water - extinguishing water can have a corrosive effect on iron or low-alloy steel.

5.3 Advice for firefighters

Protective equipment:
Wear self-contained respiratory protective device.
Wear fully protective suit.

Additional information
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Restricted access to the affected area until cleaning work is completed.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid contact with skin and eyes.
Avoid formation of dust.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Dust can combine with air to form an explosive mixture.
Keep away from ignition sources.

6.2 Environmental precautions:
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:
Allow to solidify. Pick up mechanically.
Ensure adequate ventilation.
Keep away from water.
Dispose of the material collected according to regulations.
Avoid the formation of dust.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Keep receptacles tightly sealed.
Prevent formation of dust.
Avoid contact with skin and eyes.

(Contd. on page 5)

(Contd. of page 4)

Avoid breathing dust/fume/gas/mist/vapours/spray.
Eye wash bottles and emergency showers should be provided in the immediate area near the workplace.
Use personal protective equipment as required.
Observe protective measures and safety instructions.
Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke.
Dust can combine with air to form an explosive mixture.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Store in accordance with local/regional/national/international regulations.
Store in dry conditions.
Information about storage in one common storage facility: Store away from oxidising agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in original container.
Protect against moisture.
Recommended storage temperature: 150 - 190 °C
Storage class: 3
7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with limit values that require monitoring at the workplace: Not required.

DNELs		
CAS: 85-44-9 phthalic anhydride		
Oral	Long-term exposure - systemic effects	5 mg/kg bw/d (consumer)
Dermal	Long-term exposure - systemic effects	5 mg/kg bw/d (consumer)
		14 mg/kg bw/d (workers)
Inhalative	Long-term exposure - systemic effects	8.7 mg/m³ (consumer)
		49.4 mg/m³ (workers)

PNECs	
CAS: 85-44-9 phthalic anhydride	
fresh water	1 mg/l
sea water	0.1 mg/l
intermittent release (fresh water)	5.6 mg/l
STP	10 mg/l
sediment (fresh water)	3.8 mg/kg dw
sediment (sea water)	0.38 mg/kg dw
soil	0.173 mg/kg dw

Additional information: The lists valid during the making were used as basis.

(Contd. on page 6)

(Contd. of page 5)

8.2 Exposure controls
Appropriate engineering controls
No further data; see section 7.
Technical measures and the use of suitable working methods take priority over the use of personal protective equipment.
Individual protection measures, such as personal protective equipment
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Do not eat or drink while working.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Take off immediately all contaminated clothing and wash it before reuse.

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.
Eye wash bottles and emergency showers should be provided in the immediate area near the workplace.
Respiratory protection:
Use suitable respiratory protective device in case of insufficient ventilation.
Filter ABEK-P3
Hand protection

Protective gloves

EN 374
Wear heat-resistant gloves when handling molten material, if necessary.
The glove material has to be impermeable and resistant to the product/ the substance/ the mixture.
Material of gloves
Nitrile rubber gloves; recommended material thickness: ≥ 0.4 mm, penetration time: > 120 min
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 7)

(Contd. of page 6)

Eye/face protection

Tightly sealed goggles

EN 166

Body protection:

Impervious protective clothing

antistatic protective clothing

Select type and quality of protection clothes depending on concentration and quantity at the workplace.

Environmental exposure controls Do not allow to enter sewers/ surface or ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information	
Physical state	Liquid
Colour:	transparent
Odour:	Aromatic
Odour threshold:	No information available.
Melting point/freezing point:	131 °C
Boiling point or initial boiling point and boiling range	284.5 °C
Flammability	Combustible substance, hardly flammable.
Lower and upper explosion limit	
Lower:	1.7 Vol %
Upper:	10.5 Vol %
Flash point:	152 °C (DIN 51758)
Decomposition temperature:	No information available.
pH (6 g/l) at 20 °C	2
Viscosity:	
Kinematic viscosity	Not applicable.
Dynamic at 155 °C:	1.125 mPas
Solubility	
water at 26 °C:	6 g/l (ECHA)
Not miscible or difficult to mix.	
Partition coefficient n-octanol/water (log value) at 20 °C	~ 2.07 log POW (ECHA)
Vapour pressure at 26.6 °C:	0.001 hPa (ECHA)
Density and/or relative density	
Density at 150 °C:	1.197 g/cm³
Vapour density	Not applicable.

(Contd. on page 8)

(Contd. of page 7)

9.2 Other information

Appearance:	
Form:	Melt
Important information on protection of health and environment, and on safety.	
Ignition temperature:	No information available.
Explosive properties:	Product does not present an explosion hazard. Dust can combine with air to form an explosive mixture.
Change in condition	
Oxidising properties	None.
Evaporation rate	Not applicable.

Information with regard to physical hazard classes	
Explosives	void
Flammable gases	void
Aerosols	void
Oxidising gases	void
Gases under pressure	void
Flammable liquids	void
Flammable solids	void
Self-reactive substances and mixtures	void
Pyrophoric liquids	void
Pyrophoric solids	void
Self-heating substances and mixtures	void
Substances and mixtures, which emit flammable gases in contact with water	void
Oxidising liquids	void
Oxidising solids	void
Organic peroxides	void
Corrosive to metals	void
Desensitised explosives	void

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability No decomposition if used and stored according to specifications.
Thermal decomposition / conditions to be avoided: Decomposition under heat.
10.3 Possibility of hazardous reactions
Dust can combine with air to form an explosive mixture.
Reacts violently with water and alcohols under heat and metals under humidity.
Explosion hazard on contact with:
Oxidising agents, nitric acid, glycerine (under heat), copper oxide (under heat), sodium nitrite (under heat)
10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Contd. on page 9)

(Contd. of page 8)

Avoid formation of dust.

10.5 Incompatible materials:
oxidizing agent
strong acids
Strong bases.
Glycerine

10.6 Hazardous decomposition products:
No decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity
Harmful if swallowed.

LD/LC50 values relevant for classification:		
CAS: 85-44-9 phthalic anhydride		
Oral	LD50	1,530 mg/kg (rat)
Dermal	LD50	> 3,160 mg/kg (Rabbit)
Inhalative	LC50/4h	> 2.14 mg/l (rat)

Primary irritant effect:
Skin corrosion/irritation
Causes skin irritation.
Serious eye damage/irritation
Causes serious eye damage.
Respiratory or skin sensitisation
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Germ cell mutagenicity Based on available data, the classification criteria are not met.
Carcinogenicity Based on available data, the classification criteria are not met.
Reproductive toxicity Based on available data, the classification criteria are not met.
STOT-single exposure
May cause respiratory irritation.
STOT-repeated exposure Based on available data, the classification criteria are not met.
Aspiration hazard Based on available data, the classification criteria are not met.
11.2 Information on other hazards
Endocrine disrupting properties Substance is not listed.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:	
CAS: 85-44-9 phthalic anhydride	
EC50 (48 h)	> 640 mg/l (daphnia) (Daphnia magna) ECHA
EC50 (21 d)	42 mg/l (daphnia) ECHA
LC50 (7 d)	560 mg/l (fish) ECHA

12.2 Persistence and degradability
Biodegradability: 85.2 % (14 d)
Easily biodegradable

12.3 Bioaccumulative potential log Pow: ~ 2.07 (25 °C) (ECHA)

Bioconcentration factor (BCF)	
CAS: 85-44-9 phthalic anhydride	
BCF	5.28 ECHA

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Based on available data, the classification criteria are not met.

vPvB: Based on available data, the classification criteria are not met.

12.6 Endocrine disrupting properties
The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Additional ecological information:

General notes:
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow product to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Only dispose of product residues via authorised companies according to local legislation.

European waste catalogue
Notes: The European Waste Catalogue (EWC) classifies waste materials and categorises them according to what they are and how they were produced. This may cause other classifications. The final decision belongs to the last user.

16 03 05*	organic wastes containing hazardous substances
HP4	Irritant - skin irritation and eye damage

(Contd. on page 11)

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HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP6	Acute Toxicity
HP13	Sensitising

Uncleaned packaging:
Recommendation:
Dispose of packaging according to regulations on the disposal of packagings.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

14.1 UN number or ID number
ADR/RID/ADN, IMDG, IATA UN3256
14.2 UN proper shipping name
ADR/RID/ADN 3256 ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. (PHTHALIC ANHYDRIDE)
IMDG, IATA ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. (PHTHALIC ANHYDRIDE)
14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG

Class 3 Flammable liquids.
Label 3

IATA

Class 3 Flammable liquids.
Label Forbidden
14.4 Packing group
ADR/RID/ADN, IMDG, IATA III
14.5 Environmental hazards: Not applicable.
14.6 Special precautions for user Warning: Flammable liquids.
Hazard identification number (Kemler code): 30
EMS Number: F-E,S-D
Stowage Category A
14.7 Maritime transport in bulk according to IMO instruments Not applicable.

(Contd. on page 12)

(Contd. of page 11)

Transport/Additional information:

ADR/RID/ADN	
Limited quantities (LQ)	0
Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
Transport category	3
Tunnel restriction code	D/E
IMDG	
Limited quantities (LQ)	0
Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
UN "Model Regulation":	UN 3256 ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. (PHTHALIC ANHYDRIDE), 3, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU
Named dangerous substances - ANNEX I Substance is not listed.
REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
Substance is not listed.
REGULATION (EU) 2019/1148
Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
Substance is not listed.
Annex II - REPORTABLE EXPLOSIVES PRECURSORS Substance is not listed.
Regulation (EC) No 273/2004 on drug precursors Substance is not listed.
Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors
Substance is not listed.

National regulations:

Information about limitation of use: Employment restrictions concerning juveniles must be observed.
15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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(Contd. of page 12)

Department issuing SDS:
UmEnA GmbH
http://umena.at
Email: office@umena.at

Version number of previous version: 5.0

Abbreviations and acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Sources European Chemical Agency, http://echa.europa.eu/