

## Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 12.12.2022 Version: 1.0

Date previous version: not applicable Previous version: none

Date / First version: 12.12.2022 Product: **Adipic Acid - G** 

(ID no. 30042497/SDS\_GEN\_UA/EN)

Date of print 17.10.2025

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

## 1.1. Product identifier

## Adipic Acid - G

Chemical name: Adipic acid CAS Number: 124-04-9

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

Recommended use: for the production of homopolymerisates and copolymerisates, initial product for

chemical syntheses

Not recommended use: food additive(s)

#### 1.3. Details of the supplier of the safety data sheet

Company:
«BASF T.O.V.» LLC
139, Velyka Vasylkivska str
Kyiv
UKRAINE
03150

Telephone: +38 044 591 55 95 (96) E-mail address: basf.ukraine@basf.com

#### 1.4. Emergency telephone number

Telephone: +49 180 22 73 11 20

0 800 30 72 72 (valid from Ukraine only !!)

Telefax number: +38 044 591 55 97

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#### **SECTION 2: Hazards Identification**

## 2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Eye Dam./Irrit. 2 H319 Causes serious eye irritation.

For the classifications not written out in full in this section the full text can be found in section 16.

#### 2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:



Signal Word:

Warning

Hazard Statement:

H319 Causes serious eye irritation.

Precautionary Statements (Prevention):

P280 Wear eye protection.

P264 Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical attention.

Hazard determining component(s) for labelling: adipic acid

#### 2.3. Other hazards

#### According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered. The product does not contain a substance above legal limits fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

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## **SECTION 3: Composition/Information on Ingredients**

#### 3.1. Substances

Chemical nature

adipic acid

Eye Dam./Irrit. 2

CAS Number: 124-04-9 H319

EC-Number: 204-673-3 INDEX-Number: 607-144-00-9

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

#### 3.2. Mixtures

Not applicable

#### **SECTION 4: First-Aid Measures**

#### 4.1. Description of first aid measures

Remove contaminated clothing. Avoid contact with the skin, eyes and clothing.

If inhaled:

If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

On skin contact:

Wash thoroughly with soap and water

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

### 4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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## **SECTION 5: Fire-Fighting Measures**

#### 5.1. Extinguishing media

Suitable extinguishing media: water spray, dry powder, foam, carbon dioxide

## 5.2. Special hazards arising from the substance or mixture

Advice: No particular hazards known.

#### 5.3. Advice for fire-fighters

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

#### **SECTION 6: Accidental Release Measures**

#### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Sources of ignition should be kept well clear. Use breathing apparatus if exposed to vapours/dust/aerosol. Information regarding personal protective measures, see section 8.

#### 6.2. Environmental precautions

Discharge into the environment must be avoided. Do not empty into drains. Retain and dispose of contaminated wash water.

#### 6.3. Methods and material for containment and cleaning up

For large amounts: Sweep/shovel up. Dispose of contaminated material as prescribed. For residues: Rinse away with water.

#### 6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

## **SECTION 7: Handling and Storage**

#### 7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Avoid contact with skin and eyes. Wear suitable protective clothing and eye/face protection. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

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Avoid dust formation. The product is capable of dust explosion. Sources of ignition should be kept well clear. Take precautionary measures against static discharges.

Dust explosion class: Dust explosion class 2 (Kst-value 200 up to 300 bar m s-1).

## 7.2. Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances.

Suitable materials for containers: Stainless steel 1.4401, Stainless steel 1.4301 (V2), Aluminium, Polyester resin, glass reinforced (Palatal A410), Paper/Fibreboard, High density polyethylene (HDPE), glass, Low density polyethylene (LDPE)

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

Storage stability: Tends to cake.

#### 7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

## **SECTION 8: Exposure Controls/Personal Protection**

#### 8.1. Control parameters

Components with occupational exposure limits No occupational exposure limits known.

**PNEC** 

freshwater: 0,126 mg/l

marine water: 0,0126 mg/l

intermittent release: 0,46 mg/l

sediment (freshwater): 0,484 mg/kg

sediment (marine water): 0,0484 mg/kg

soil: 0,0228 mg/kg

STP: 59,1 mg/l

**DNEL** 

worker

Long-term exposure- systemic effects, Inhalation: 74,1 mg/m3

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consumer:

Long-term exposure- systemic effects, dermal: 7,5 mg/kg

worker:

Long-term exposure- systemic effects, dermal: 21 mg/kg

consumer:

Long-term exposure- systemic effects, Inhalation: 13 mg/m3

consumer:

Long-term exposure- systemic effects, oral: 7,5 mg/kg

#### 8.2. Exposure controls

#### Personal protective equipment

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1or FFP1)

Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

butyl rubber (butyl) - 0.7 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

Eve protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

#### General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Take off immediately all contaminated clothing. At the end of the shift the skin should be cleaned and skin-care agents applied.

#### **SECTION 9: Physical and Chemical Properties**

#### 9.1. Information on basic physical and chemical properties

State of matter: solid Form: crystalline Colour: white Odour: odourless

Odour threshold:

No data available.

Melting point: 150,85 °C (Directive 92/69/EEC, A.1)

Boiling point: 337,5 °C

> (1.013 hPa) Literature data.

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Sublimation point:

No applicable information available.

Flammability: not highly flammable (Directive 92/69/EEC, A.10)

Lower explosion limit:

No data available.

Upper explosion limit:

No data available.

Flash point: 196 °C (closed cup)

Literature data.

Auto-ignition temperature: 405 °C (DIN 51794)

Self-ignition temperature: Temperature: > 400 °C Test type: Self-ignition at high

temperatures.

(Method: Directive 92/69/EEC,

A.16)

Thermal decomposition: No data available.

pH value: 2,7

2,7 (pH Meter) (23 g/l, 25 °C)

3,2

(10 g/l)

Viscosity, kinematic:

No data available.

Viscosity, dynamic:

No data available.

Solubility in water: Literature data.

23 g/l (25 °C)

Solubility (qualitative) solvent(s): organic solvents

soluble

Partitioning coefficient n-octanol/water (log Kow): 0,093 (measured)

(25 °C; pH value: 3,3)

Vapour pressure: 0,097 hPa

(18,5 °C)

Literature data.

Relative density: 1,36

(25 °C)

Literature data.

Density: 1,36 g/cm3

(25 °C)

Literature data.

Relative vapour density (air):

No data available.

Particle characteristics

Particle size distribution: approx. 60 µm (D50, Volumetric Distribution,

measured)

#### 9.2. Other information

Information with regard to physical hazard classes

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**Explosives** 

Explosion hazard: Product is not explosive, however a (Directive 92/69/EEC, A.14)

dust explosion could result from an

air / dust mixture.

Impact sensitivity: not shock-sensitive (Directive 92/69/EEC, A.14)

Oxidizing properties

Fire promoting properties: Based on its structural properties

the product is not classified as

oxidizing.

Pyrophoric properties

Self-ignition temperature: Test type: Spontaneous self-

ignition at room-temperature.

not self-igniting

Self-heating substances and mixtures

Self heating ability: It is not a substance capable of

spontaneous heating.

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:

Forms no flammable gases in the presence of water.

Corrosion to metals

No corrosive effect on metal.

Other safety characteristics

Minimum ignition energy: 10 - 30 mJ (DIN EN 13821)

Bulk density: approx. 700 kg/m3 (other)

pKA: 4,43 (20 °C)

Adsorption/water - soil: KOC: 1,6

KOC: 1,61; log KOC: 0,21 (calculated)

Surface tension:

Based on chemical structure, surface

activity is not to be expected.

Molar mass: 146,14 g/mol

Evaporation rate:

The product is a non-volatile solid.

## **SECTION 10: Stability and Reactivity**

#### 10.1. Reactivity

Corrosion to metals: No corrosive effect on metal.

Formation of Remarks: Forms no flammable gases in the

flammable gases: presence of water.

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#### 10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

#### 10.3. Possibility of hazardous reactions

Reacts with basic components to generate heat. Dust explosion hazard.

#### 10.4. Conditions to avoid

Avoid dust formation. Avoid deposition of dust. See SDS section 7 - Handling and storage.

#### 10.5. Incompatible materials

Substances to avoid: alkaline reactive substances

#### 10.6. Hazardous decomposition products

Thermal decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Incomplete combustion results in formation of toxic gases, containing mainly carbon monoxide and carbon dioxide.

#### **SECTION 11: Toxicological Information**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): approx. 5.560 mg/kg (BASF-Test)

LC50 rat (by inhalation): > 7,7 mg/l 4 h (BASF-Test)

An aerosol was tested.

LD50 rabbit (dermal): > 7.940 mg/kg (other)

## Irritation

Assessment of irritating effects:

Not irritating to the skin. May cause severe damage to the eyes.

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Experimental/calculated data: Skin corrosion/irritation

rabbit: non-irritant (BASF-Test)

Serious eye damage/irritation

rabbit: irreversible damage (OECD Guideline 405)

#### Respiratory/Skin sensitization

#### Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies. A sensitizing effect on particularly sensitive individuals cannot be excluded.

#### Experimental/calculated data:

guinea pig: Non-sensitizing. (other)

#### Germ cell mutagenicity

#### Assessment of mutagenicity:

The substance was not mutagenic in mammalian cell culture. No mutagenic effect was found in various tests with microorganisms and mammals.

#### Carcinogenicity

#### Assessment of carcinogenicity:

In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was not observed.

#### Reproductive toxicity

## Assessment of reproduction toxicity:

No effects have been reported in reproductive organs in long term animal studies.

#### **Developmental toxicity**

#### Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

#### Specific target organ toxicity (single exposure)

## Assessment of STOT single:

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

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#### Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated oral uptake of the substance did not cause substance-related effects.

#### Aspiration hazard

No aspiration hazard expected.

#### Interactive effects

No data available.

#### 11.2. Information on other hazards

#### **Endocrine disrupting properties**

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

#### **SECTION 12: Ecological Information**

## 12.1. Toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

#### Toxicity to fish:

LC0 (96 h) >= 1.000 mg/l, Brachydanio rerio (other, static) Nominal values (confirmed by concentration control analytics)

#### Aquatic invertebrates:

LC50 (48 h) 46 mg/l, Daphnia magna (OECD Guideline 202, part 1) Nominal concentration.

#### Aquatic plants:

EC50 (72 h) 64,5 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static) Nominal concentration.

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No observed effect concentration (72 h) 40,6 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
Nominal concentration.

Microorganisms/Effect on activated sludge:

EC50 (3 h) > 100 mg/l, activated sludge (OECD Guideline 209, aerobic)

Chronic toxicity to fish:

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 6,3 mg/l, Daphnia magna (OECD Guideline 211) Nominal concentration.

Assessment of terrestrial toxicity:

No data available.

Study scientifically not justified.

#### 12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O): Readily biodegradable (according to OECD criteria).

Elimination information:

83 % BOD of the ThOD (30 d) (OECD 301D; EEC 92/69, C.4-E) (aerobic, domestic sewage) Literature data.

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

#### 12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential:

Bioconcentration factor(BCF): 3,16 (calculated) Accumulation in organisms is not to be expected.

#### 12.4. Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will not evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

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#### 12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

#### 12.6. Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

#### 12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

#### 12.8. Additional information

Other ecotoxicological advice:

Do not release untreated into natural waters.

#### **SECTION 13: Disposal Considerations**

#### 13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging:

Uncleaned empties should be disposed of in the same manner as the contents.

## **SECTION 14: Transport Information**

#### **Land transport**

ADR

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Not applicable
Not applicable
Not applicable

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Special precautions for

user

None known

RID

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

Special precautions for

user

None known

#### **Inland waterway transport**

**ADN** 

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user:

Transport in inland waterway vessel

Not evaluated

#### Sea transport

**IMDG** 

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user

#### Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

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UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user

#### 14.1. UN number or ID number

See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

## 14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

#### 14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

## 14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

#### 14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

## 14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

#### 14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

#### **SECTION 15: Regulatory Information**

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

#### **SECTION 16: Other Information**

Assessment of the hazard classes according to UN GHS criteria (most recent version)

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Eye Dam./Irrit. 1 Aquatic Acute 3 Eye Dam./Irrit.

Eye Dam./Irrit. Serious eye damage/eye irritation H319 Causes serious eye irritation.

#### **Abbreviations**

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail, TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.