

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 1 of 11

1. Identification

Product identifier

Developer, THM-100

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

Details of the supplier of the safety data sheet

| | | |
|-------------------------|----------------------------------|------------------------------|
| Company name: | AnalytiChem GmbH | |
| | ACD | |
| Street: | Stempelstraße 6 | |
| Place: | D-47167 Duisburg | |
| Telephone: | 0203/5194-0 | Telefax: 0203/5194-290 |
| E-mail: | info@analytichem.de | |
| Contact person: | Abteilung Produktsicherheit | Telephone: 0203/5194-107/117 |
| E-mail: | produktsicherheit@analytichem.de | |
| Internet: | www.analytichem.de | |
| Responsible Department: | Abteilung Produktsicherheit | |

Emergency phone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

This product is a mixture. REACH Registration Number see section 3.

2. Hazard(s) identification

Classification of the chemical

Regulation (EC) No 1272/2008

Skin Irrit. 2; H315

Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

Label elements

Regulation (EC) No 1272/2008

Signal word: Warning

Pictograms:



Hazard statements

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statements

P264 Wash skin thoroughly after handling.

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 2 of 11

P280 Wear eye protection/face protection.
 P280 Wear protective gloves.
 P302+P352 If on skin: Wash with plenty of water and soap.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P332+P313 If skin irritation occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.

Hazards not otherwise classified

No data available

3. Composition/information on ingredients

Mixtures

Chemical characterization

Mixtures in aqueous solution

Relevant ingredients

| CAS No | Components | | | Quantity |
|-----------|---|--------------|------------------|-----------|
| | EC No | Index No | REACH No | |
| | Classification (Regulation (EC) No 1272/2008) | | | |
| 2052-49-5 | tetrabutylammonium hydroxide | | | 1 - < 5 % |
| | 218-147-6 | 060-300-10-0 | 01-2120231229-61 | |
| | Acute Tox. 4, Skin Corr. 1B; H302 H314 | | | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Components | Quantity |
|-----------|--|------------------------------|-----------|
| | Specific Conc. Limits, M-factors and ATE | | |
| 2052-49-5 | 218-147-6 | tetrabutylammonium hydroxide | 1 - < 5 % |
| | oral: LD50 = 1000 mg/kg | | |

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

4. First-aid measures

Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.
 Call a doctor if you feel unwell.

After contact with skin

Wash immediately with: Water
 Take off immediately all contaminated clothing and wash it before reuse.
 In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
 Remove contact lenses, if present and easy to do. Continue rinsing.

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 3 of 11

After ingestion

Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk.
Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Irritant

Indication of any immediate medical attention and special treatment needed

No data available

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

Specific hazards arising from the chemical

Non-combustible liquids
Hazardous combustion products
In case of fire may be liberated:
Nitrogen oxides (NOx)

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General advice

Corrosive to metals.
Do not breathe vapor or spray.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapors/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment (PPE): see section 8

Environmental precautions

Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 4 of 11

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).
Collect in closed and suitable containers for disposal.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear breathing apparatus if exposed to vapors/dusts/aerosols.

Reference to other sections

Safe handling: see section 7
Personal protection equipment (PPE): see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Use personal protection equipment.
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.
Do not breathe vapor or spray.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Remove contaminated, saturated clothing immediately.
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. Avoid: aerosol or mist formation Do not breathe vapor or spray.

Further information on handling

Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Corrosive to metals.
Unsuitable container/equipment material: Metal

Hints on joint storage

national regulations

Further information on storage conditions

Keep container tightly closed.

Specific end use(s)

Laboratory chemicals

8. Exposure controls/personal protection

Control parameters

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 5 of 11

DNEL/DMEL values

| CAS No | Substance | | |
|--------------------------|------------------------------|----------|------------------------|
| DNEL type | Exposure route | Effect | Value |
| 2052-49-5 | tetrabutylammonium hydroxide | | |
| Worker DNEL, long-term | inhalation | systemic | 4,93 mg/m ³ |
| Worker DNEL, long-term | dermal | systemic | 1,4 mg/kg bw/day |
| Consumer DNEL, long-term | inhalation | systemic | 0,87 mg/m ³ |
| Consumer DNEL, long-term | dermal | systemic | 0,5 mg/kg bw/day |
| Consumer DNEL, long-term | oral | systemic | 0,5 mg/kg bw/day |

PNEC values

| CAS No | Substance | |
|--|------------------------------|--|
| Environmental compartment | Value | |
| 2052-49-5 | tetrabutylammonium hydroxide | |
| Freshwater | 0,0165 mg/l | |
| Freshwater (intermittent releases) | 0,165 mg/l | |
| Marine water | 0,00165 mg/l | |
| Freshwater sediment | 2,16 mg/kg | |
| Marine sediment | 0,216 mg/kg | |
| Micro-organisms in sewage treatment plants (STP) | 28,4 mg/l | |
| Soil | 0,421 mg/kg | |

Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of the protective agents should be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Thermal hazards

No data available

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 6 of 11

Environmental exposure controls

Do not allow to enter into surface water or drains.

9. Physical and chemical properties

Information on basic physical and chemical properties

| | | |
|---|-------------------|---------------------|
| Physical state: | Liquid | |
| Color: | clear | |
| Odor: | No data available | |
| Odour threshold: | No data available | |
| Melting point/freezing point: | | No data available |
| Boiling point or initial boiling point and boiling range: | | No data available |
| Flammability: | | No data available |
| Lower explosion limits: | | No data available |
| Upper explosion limits: | | No data available |
| Flash point: | | No data available |
| Auto-ignition temperature: | | No data available |
| Decomposition temperature: | | No data available |
| Viscosity / kinematic: | | No data available |
| Water solubility: | | completely miscible |
| Solubility in other solvents | | |
| No data available | | |
| Dissolution rate: | | No data available |
| Partition coefficient n-octanol/water: | | No data available |
| Dispersion stability: | | No data available |
| Vapor pressure: | | No data available |
| Vapor pressure: | | No data available |
| Density: | | No data available |
| Relative density: | | No data available |
| Bulk density: | | No data available |
| Relative vapour density: | | No data available |
| Particle characteristics: | | No data available |

Other information

Information with regard to physical hazard classes

| | |
|---------------------------|-------------------|
| Explosive properties | |
| No data available | |
| Sustaining combustion: | No data available |
| Self-ignition temperature | |
| Solid: | No data available |
| Gas: | No data available |
| Oxidizing properties | |
| No data available | |

Other safety characteristics

| | |
|--------------------------|-------------------|
| Evaporation rate: | No data available |
| Solvent separation test: | No data available |
| Solvent content: | 0 |
| Solid content: | 0 |
| Sublimation point: | No data available |
| Softening point: | No data available |
| Pour point: | No data available |
| No data available: | |
| Viscosity / dynamic: | No data available |

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 7 of 11

Flow time:

No data available

Further Information

Corrosive to metals.

10. Stability and reactivity

Reactivity

Corrosive to metals.

Chemical stability

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Acids

Conditions to avoid

No data available

Incompatible materials

Metal

Hazardous decomposition products

In case of fire may be liberated:
SECTION 5: Fire fighting measures

Further information

No data available

11. Toxicological information

Information on toxicological effects

Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Acute toxicity

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

ATEmix calculated

ATE (oral) 50000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No | Components | | | | |
|-----------|------------------------------|-----------------|---------|---------------------|--------------------|
| | Exposure route | Dose | Species | Source | Method |
| 2052-49-5 | tetrabutylammonium hydroxide | | | | |
| | oral | LD50 1000 mg/kg | Rat | Study report (2018) | OECD Guideline 423 |

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation
Serious eye damage/eye irritation: Causes serious eye irritation

Sensitizing effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Specific target organ toxicity (STOT) - single exposure

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

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 8 of 11

Specific target organ toxicity (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.

Route(s) of Entry

There are no data available on the preparation/mixture itself.

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

Additional information on tests

There are no data available on the preparation/mixture itself.

Practical experience

There are no data available on the preparation/mixture itself.

Information on other hazards

Endocrine disrupting properties

There are no data available on the preparation/mixture itself.

Other information

There are no data available on the preparation/mixture itself.

Further information

There are no data available on the preparation/mixture itself.

12. Ecological information

Ecotoxicity

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

| CAS No | Components | | | | | |
|-----------|------------------------------|---------------|-----------|---------|--------------------|----------------------------------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 2052-49-5 | tetrabutylammonium hydroxide | | | | | |
| | Acute fish toxicity | LC50 mg/l | > 100 | 96 h | Danio rerio | REACH Registration Dossier |
| | Acute algae toxicity | ErC50 mg/l | > 200 | 72 h | Chlorella vulgaris | REACH Registration Dossier |
| | Acute crustacea toxicity | EC50 mg/l | 16,5 | 48 h | Daphnia magna | REACH Registration Dossier |
| | | | | | | other: as mentioned below |
| | | | | | | OECD Guideline 201 |
| | | | | | | OECD Guideline 202 |

Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

| CAS No | Components | Log Pow |
|-----------|------------------------------|---------|
| 2052-49-5 | tetrabutylammonium hydroxide | 1,518 |

BCF

| CAS No | Components | BCF | Species | Source |
|-----------|------------------------------|--------|---------|----------------------|
| 2052-49-5 | tetrabutylammonium hydroxide | 70,794 | Fish | REACH Registration D |

Mobility in soil

There are no data available on the mixture itself.

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 9 of 11

Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

14. Transport information

Land transport (ADR/RID)

UN number or ID number: UN 3267
UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (tetrabutylammonium hydroxide)
Transport hazard class(es): 8
Packing group: III
Hazard label: 8
Classification Code: C7
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 80
Tunnel restriction code: E

Inland waterways transport (ADN)

UN number or ID number: UN 3267
UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (tetrabutylammonium hydroxide)
Transport hazard class(es): 8
Packing group: III
Hazard label: 8
Classification Code: C7
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1

Marine transport (IMDG)

UN number or ID number: UN 3267
UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (tetrabutylammonium hydroxide)

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 10 of 11

Transport hazard class(es): 8
Packing group: III
Hazard label: 8
Special Provisions: 223 274
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-A, S-B
Segregation group: 18 - alkalis

Air transport (ICAO-TI/IATA-DGR)

UN number or ID number: UN 3267
UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (tetrabutylammonium hydroxide)

Transport hazard class(es): 8
Packing group: III
Hazard label: 8
Special Provisions: A3 A803
Limited quantity Passenger: 1 L
Passenger LQ: Y841
Excepted quantity: E1
IATA-packing instructions - Passenger: 852
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 856
IATA-max. quantity - Cargo: 60 L

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

15. Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):
Entry 3

National regulatory information

Employment restrictions: Observe employment restrictions for young people.
Water hazard class (D): - - non-hazardous to water

16. Other information

Abbreviations and acronyms

Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Skin Irrit: Skin irritation
Eye Irrit: Eye irritation

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008

| Classification | Classification procedure |
|---------------------|--------------------------|
| Skin Irrit. 2; H315 | Calculation method |
| Eye Irrit. 2; H319 | Calculation method |

Relevant H statements (full text)

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H319 Causes serious eye irritation

Developer, THM-100

Revision date: 02/23/2024

Product code: 1-104997

Page 11 of 11

Other data

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Provide appropriate information, instructions and training to users.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)