

SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200 and ANSI standard Z400.1-2010



Developer series AR 300-40

Material number AR 300-40

Revision date: 7/5/2017
Version: 12

Language: en-US

Date of print: 8/15/2017
Page: 1 of 9

1. Product and company identification

Product identifier

Trade name: Developer series AR 300-40

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

General use: Intermediate for electronic industry

Details of the supplier of the safety data sheet

Company name: Allresist
Gesellschaft für chemische Produkte zur Mikrostrukturierung mbH
Street/POB-No.: Am Biotop 14
Postal Code, city: 15344 Strausberg
Germany
WWW: www.allresist.de
E-mail: info@allresist.de
Telephone: +49 (0)33 41-35 93-0
Telefax: +49 (0)33 41-35 93-29
Dept. responsible for information:
Frau Feldt, Email: doerte.feldt@allresist.de

Emergency phone number

Telephone: +49 (0)33 41-35 93-0

2. Hazards identification

Emergency overview

Appearance: Form: liquid
Color: colorless
Odor: weak amine odor
Classification: Corrosive to Metals - Category 1; Acute Toxicity - oral - Category 4; Acute Toxicity - dermal - Category 4; Skin Corrosion - Category 1B;
Specific Target Organ Toxicity (Single Exposure) - Category 2;
Specific Target Organ Toxicity (Repeated Exposure) - Category 2;

Hazard symbols:



Signal word:

Danger

Hazard statements:

May be corrosive to metals.
Harmful if swallowed.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause damage to organs.
May cause damage to organs through prolonged or repeated exposure.

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Precautionary statements: Keep only in original container.
Do not breathe mist/vapors/spray.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see First aid on this label).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.
Store locked up.
Store only in corrosive resistant containers.
Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Special danger of slipping by leaking/spilling product.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: aqueous solution

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 75-59-2	Tetramethylammonium hydroxide	< 2.5 %	Acute Toxicity - oral - Category 2. Acute Toxicity - dermal - Category 1. Skin Corrosion - Category 1B. Specific Target Organ Toxicity (Single Exposure) - Category 1. Specific Target Organ Toxicity (Repeated Exposure) - Category 1. Aquatic toxicity - chronic - Category 2.

4. First aid measures

General information: First aider: Pay attention to self-protection!
If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical attention.

Following skin contact: After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Cover with sterile dressing material to protect against infection. Immediately get medical attention.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

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After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.
Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

Most important symptoms/effects, acute and delayed

May cause damage to organs. Harmful if swallowed.
Harmful in contact with skin. Causes severe skin burns and eye damage.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

non-flammable

Auto-ignition temperature: No data available

Suitable extinguishing media:

Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Specific hazards arising from the chemical

Fires in the immediate vicinity may cause the development of dangerous vapors.
In case of fire may be liberated: nitrogen oxides (NO_x), hydrogen chloride, carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Use a breathing apparatus independent of the ambient air (isolated apparatus) and a full protection outfit (suit) against chemicals.

Additional information:

Cool exposed containers with water spray.
Do not allow water used to extinguish fire to enter drains, ground or waterways.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

6. Accidental release measures

Personal precautions:

Avoid contact with the substance. Do not breathe mist/vapors/spray.
If possible, eliminate leakage. Ensure adequate ventilation, especially in confined areas.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Remove persons to safety. Keep unprotected people away.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains.
If necessary notify appropriate authorities.

Methods for clean-up:

Absorb spillage to prevent material damage.
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.
Final cleaning. Never return spills in original containers for re-use.

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7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe mist/vapors/spray. Avoid contact with skin, eyes, and clothing.
Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse.
Wash hands before breaks and after work. When using do not eat, drink or smoke.
When handling large quantities, supply emergency spray.

Precautions against fire and explosion:
Usual measures for fire prevention.

Storage

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight.
Store containers in upright position.
Unsuitable materials: Bronze, aluminium, tin, zinc.
Storage temperature: 50 °F up to 71.6 °F.
Only trained personnel may be allowed to enter storage area.
Do not allow containers to stand open. Handle and open container with care.

Hints on joint storage: Do not store together with: aluminium, tin, zinc, halogens, acids, oxidizing agents, ammonium compounds.
Keep away from food, drink and animal feedingstuffs.

8. Exposure controls / personal protection

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. When aerosols or vapors form: Withdraw by suction.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing.
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material:
Polychloroprene 0.5 mm, nitrile rubber 0.35 mm, butyl caoutchouc (butyl rubber) 0.5 mm
Breakthrough time: > 480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: When aerosols or vapors form: Use appropriate respiratory protection.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

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General hygiene considerations:

Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing and wash it before reuse.
Contaminated work clothing should not be allowed out of the workplace.
Do not breathe mist/vapors/spray. When handling large quantities, supply emergency spray.
When using do not eat, drink or smoke. Wash hands before breaks and after work.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: liquid Color: colorless
Odor:	weak amine odor
Odor threshold:	No data available
pH value:	at 68 °F: ≥ 11.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	non-flammable
Evaporation rate:	No data available
Flammability:	This product is non-flammable.
Explosion limits:	No data available
Vapor pressure:	at 68 °F: 23.33 hPa
Vapor density:	No data available
Density:	at 77 °F: approx. 1 g/mL
Water solubility:	at 68 °F: soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Additional information:	No data available

10. Stability and reactivity

Reactivity:	May be corrosive to metals. Reactions with base metals under hydrogen development.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	Violent reaction with strong oxidizing agents, acids. Caution! With nitrosic agents (such as nitric salts or nitric oxides) under special conditions may form nitrosamines.
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Protect against direct sunlight.
Incompatible materials:	Metals, halogens, strong oxidizing agents, acids, nitric oxide, ammonium compounds
Hazardous decomposition products:	No hazardous decomposition products when regulations for storage and handling are observed.
Thermal decomposition:	No data available

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11. Toxicological information

Toxicological tests

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.
Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed.
ATEmix (calculated): $300 \text{ mg/kg} < \text{ATE} \leq 2000 \text{ mg/kg}$.
Acute toxicity (dermal): Acute Toxicity - dermal - Category 4 = Harmful in contact with skin.
ATEmix (calculated): $1000 \text{ mg/kg} < \text{ATE} \leq 2000 \text{ mg/kg}$.
Acute toxicity (inhalative): Lack of data.
Skin corrosion/irritation, eye damage/irritation: Skin Corrosion - Category 1B = Causes severe skin burns and eye damage.
Sensitisation to the respiratory tract: Lack of data.
Skin sensitisation: Lack of data.
Germ cell mutagenicity/Genotoxicity: Lack of data.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Lack of data.
Effects on or via lactation: Lack of data.
Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 2 = May cause damage to organs.
Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) - Category 2 = May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard: Lack of data.

Other information: Information about Tetramethylammonium hydroxide:
LD50 Rat, oral: 7-50 mg/kg.
LD50 Rat, dermal: 25 -50 mg/kg.
Systemic effects:
Nausea, vomiting, shortage of breath, unconsciousness, apnea, death.
With nitrosic agents (such as nitric salts or nitric oxides) under special conditions may form nitrosamines. In animal experiments nitrosamines were carcinogenic.

Symptoms

In case of inhalation:
Mucous membrane irritation, cough, shortage of breath, damage of respiratory tract. Pulmonary edema is possible. Symptoms may occur with delay.
In case of ingestion:
Nausea, vomiting, shortage of breath, unconsciousness, apnea
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Forms corrosive mixtures with water even if diluted. Harmful effects on water organisms by modification of pH-value.

Mobility in soil

No data available

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Persistence and degradability

Further details: No data available

Additional ecological information

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Dispose of as special waste in compliance with local and national regulations.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

14. Transport information

USA: Department of Transportation (DOT)

Identification number: UN1835
Proper shipping name: UN 1835, TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Hazard class or Division: 8
Packing Group: II
Labels: 8
Special provisions: B2, IB2, T7, TP2
Packaging – Exceptions: 154
Packaging – Non-bulk: 202
Packaging – Bulk: 242
Quantity limitations – Passenger aircraft / rail: 1 L
Quantity limitations – Cargo only: 30 L
Vessel stowage – Location: A
Vessel stowage – Other: 52



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Sea transport (IMDG)

UN number: UN 1835
Proper shipping name: UN 1835, TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Class or division, Subsidiary risk: Class 8, Subrisk-
Packing Group: II
EmS: F-A, S-B
Special provisions: -
Limited quantities: 1 L
Excepted quantities: E2
Contaminated packaging - Instructions: P001
Contaminated packaging - Provisions: -
IBC - Instructions: IBC02
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T7
Tank instructions - Provisions: TP2
Stowage and handling: Category A.
Segregation: SG35
Properties and observations: Miscible with water. Reacts violently with acids.
Marine pollutant: no
Segregation group: 2, 18

Air transport (IATA)

UN/ID number: UN 1835
Proper shipping name: UN 1835, TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Class or division, Subsidiary risk: Class 8
Packing Group: II
Hazard label: Corrosive
Excepted Quantity Code: E2
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y840 - Max. Net Qty/Pkg. 0.5 L
Passenger and Cargo Aircraft: Pack.Instr. 851 - Max. Net Qty/Pkg. 1 L
Cargo Aircraft only: Pack.Instr. 855 - Max. Net Qty/Pkg. 30 L
Special provisions: A3 A803
Emergency Response Guide-Code (ERG): 8L

15. Regulatory information

National regulations - U.S. Federal Regulations

Tetramethylammonium hydroxide: TSCA Inventory: listed
TSCA HPVC: not listed

National regulations - Great Britain

Hazchem-Code: 2X

16. Other information

Text for labeling: Contains < 2.5 % Tetramethylammonium hydroxide. Safety data sheet available on request.

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Hazard rating systems:



NFPA Hazard Rating:
Health: 3 (Serious)
Fire: 0 (Minimal)
Reactivity: 1 (Slight)
HMIS Version III Rating:
Health: 3 (Serious) - Chronic effects
Flammability: 0 (Minimal)
Physical Hazard: 1 (Slight)
Personal Protection: X = Consult your supervisor

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZARD		1
		X

Reason of change: Changes in section 3: information on ingredients
General revision

Date of first version: 8/25/2010

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

