

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) 2020/878

600T
Version 5.0

Retarter 600T
Revision date 01-Jun-2023

Print date 30-Nov-2023

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

1.1 Product identifier

Trade name/designation

600T Retarter 600T
UFI: WH00-C0TV-P00Y-14FX

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

Relevant identified uses

Plating agent

1.3 Details of the supplier of the safety data sheet

Supplier

BARTH GbR
TUPF-Signiersysteme &
Elektrolabors
Graf-Kirchberg-Straße 66 Telephone: +49 7303 168102
89257 Illertissen Telefax: +49 7303 168103
Deutschland E-mail: Info@Tupf-Signiergeraete.de
Website: www.Tupf-Signiergeraete.de

Department responsible for information

E-mail (competent person) berlintonx@giftnotruf.de

1.4 Emergency telephone number

Emergency telephone number: +49-30-19240
Only available during office hours.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
Flam. Liq. 3; flammable liquids; H226 Flammable liquid and vapour.
Acute Tox. 4 oral; Acute toxicity; H302 Harmful if swallowed.
Eye Dam. 1; Serious eye damage/eye irritation; H318 Causes serious eye damage.
STOT SE 3 Irritation to respiratory tract; STOT-single exposure; H335 May cause respiratory irritation.
STOT SE 3 Narcotic effects; STOT-single exposure; H336 May cause drowsiness or dizziness.
Skin Irrit. 2; Skin corrosion/irritation; H315 Causes skin irritation.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



GHS02 GHS05 GHS07

Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H315 Causes skin irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves and eye/face protection.

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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.
P370 + P378 In case of fire: Use extinguishing powder or sand to extinguish.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.

Hazard components for labelling

butan-1-ol; n-butanol
n-butyl acetate

Supplemental hazard information

not applicable

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients.

3.2 Mixtures

Description

Solvent

Hazardous ingredients

CAS No. EC No. Index No.	Substance name REACH No. Classification according to Regulation (EC) No 1272/2008 [CLP]	weight-%
123-86-4 204-658-1 607-025-00-1	n-butyl acetate 01-2119485493-29 Flam. Liq. 3 H226 / STOT SE 3 H336 / EUH066	50,0 < 70,0
71-36-3 200-751-6 603-004-00-6	butan-1-ol; n-butanol 01-2119484630-38 Flam. Liq. 3 H226 / Acute Tox. 4 H302 / Skin Irrit. 2 H315 / Eye Dam. 1 H318 / STOT SE 3 H335 / STOT SE 3 H336 ATE (dermal): 3.430 mg/kg ATE (inhalative): >= 24 mg/L (4 h) ATE (oral): 1.782 mg/kg	35,0 < 50,0

Remark

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

Following skin contact

Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

Following ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

Self-protection of the first aider

First aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

In all cases of doubt, or when symptoms persist, seek medical advice.

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4.3 Indication of any immediate medical attention and special treatment needed

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

alcohol resistant foam, Carbon dioxide (CO₂), Powder, spray mist, (water)

Unsuitable extinguishing media

Strong water jet

5.2 Special hazards arising from the substance or mixture

Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3 Advice for firefighters

Provide a conveniently located respiratory protective device. Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ventilate affected area. Do not breathe vapours.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up

For containment

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

For cleaning up

Clean using cleansing agents. Do not use solvents.

6.4 Reference to other sections

Safe handling: see section 7

Personal protection equipment: refer to section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling

Avoid contact with skin, eyes and clothes. Avoid respiration of swarf. Personal protection equipment: see section 8 Do not empty containers with pressure - no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

Advices on general occupational hygiene

When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers.

Storage class LGK3 - Flammable liquids

Further information on storage conditions

Keep container tightly closed. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Store in a well-ventilated and dry room at temperatures between 5 °C and 35 °C.

7.3 Specific end use(s)

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Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

CAS No.	Substance name	Source	Long-term /short-term (Spitzenbegrenzung)
71-36-3	butan-1-ol; n-butanol	WEL	- / 154 (-) mg/m ³ (may be absorbed through the skin)

Additional information

Long-term: Long-term occupational exposure limit value
short-term: short-term occupational exposure limit value

Biological limit values

No data available

DNEL worker

CAS No.	Substance name	DNEL type	DNEL value
71-36-3	butan-1-ol; n-butanol	Long-term – inhalation, local effects	310 mg/m ³
123-86-4	n-butyl acetate	Long-term – inhalation, systemic effects	48 mg/m ³
123-86-4	n-butyl acetate	Long-term - dermal, systemic effects	7 mg/kg bw/day

DNEL Consumer

CAS No.	Substance name	DNEL type	DNEL value
71-36-3	butan-1-ol; n-butanol	Long-term – inhalation, systemic effects	55,357 mg/m ³
71-36-3	butan-1-ol; n-butanol	Long-term – inhalation, local effects	155 mg/m ³
71-36-3	butan-1-ol; n-butanol	Long-term - dermal, systemic effects	3,125 mg/kg bw/day
71-36-3	butan-1-ol; n-butanol	Long-term - oral, systemic effects	1,562 mg/kg bw/day
123-86-4	n-butyl acetate	Long-term – inhalation, systemic effects	12 mg/m ³
123-86-4	n-butyl acetate	Long-term - dermal, systemic effects	3,4 mg/kg bw/day
123-86-4	n-butyl acetate	Long-term - oral, systemic effects	3,4 mg/kg bw/day

PNEC

CAS No.	Substance name	PNEC type	PNEC Value
71-36-3	butan-1-ol; n-butanol	aquatic, intermittent release	2,25 mg/L
71-36-3	butan-1-ol; n-butanol	aquatic, marine water	0,008 mg/L
71-36-3	butan-1-ol; n-butanol	sewage treatment plant	2.476 mg/L
71-36-3	butan-1-ol; n-butanol	sediment, freshwater	0,324 mg/kg sediment dw
71-36-3	butan-1-ol; n-butanol	sediment, marine water	0,032 mg/kg sediment dw
123-86-4	n-butyl acetate	aquatic, intermittent release	0,36 mg/L
123-86-4	n-butyl acetate	aquatic, marine water	0,018 mg/L
123-86-4	n-butyl acetate	sewage treatment plant	35,6 mg/L
123-86-4	n-butyl acetate	sediment, freshwater	0,981 mg/kg sediment dw
123-86-4	n-butyl acetate	sediment, marine water	0,098 mg/kg sediment dw

8.2 Exposure controls

Provide good ventilation.This can be achieved with local or room suction.

Personal protection equipment

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Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Hand protection

Suitable material: NBR (Nitrile rubber)
Thickness of the glove material $\geq 0,4$ mm
Breakthrough time ≥ 480 min

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. Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin.
Recommended glove articles: EN ISO 374

Skin protection

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye/face protection

Eye glasses with side protection: EN 166

Body protection

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. Anti-static clothing including shoes are recommended.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	colourless
Odour	characteristic
pH at 20 °C	not relevant
Melting point/freezing point	-89,7 °C Source: butan-1-ol; n-butanol
Initial boiling point and boiling range	$\geq 117,2$ °C Source: butan-1-ol; n-butanol
Flash point	27 °C
flammability	Flammable liquid and vapour.
Lower explosion limit at 20°C	1,2 Vol-% Source: n-butyl acetate
Upper explosion limit at 20°C	11,3 Vol-% Source: butan-1-ol; n-butanol
Vapour pressure at 20°C	4,881 mbar
Relative vapour density	not applicable
Density at 20 °C	0,845 kg/l
Water solubility at 20°C	practically insoluble
Partition coefficient: n-octanol/water	see section 12
Ignition temperature in °C	343 °C Source: butan-1-ol; n-butanol
Decomposition temperature	not determined
Viscosity at 20 °C	20 mm ² /s
particle characteristics	not applicable

9.2 Other information

not applicable

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SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3 Possibility of hazardous reactions

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4 Conditions to avoid

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7. Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous decomposition products

Hazardous decomposition byproducts may form with exposure to high temperatures e.g.: Carbon dioxide (CO₂), Carbon monoxide, smoke.

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed.

ATEmix: (oral) 1.041,667 mg/kg

butan-1-ol; n-butanol

LD50: dermal (Rabbit): 3.430 mg/kg

LC0: inhalative (Rat): >= 24 mg/L (4 h)

LD0 oral (Dog): 1.782 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

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

Overall assessment on CMR properties

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

STOT-single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

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.

Practical experience/human evidence

Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: Headache, Dizziness, fatigue, amyosthenia, Dizziness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

11.2 Information on other hazards

Endocrine disrupting properties

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

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SECTION 12: Ecological information

12.1 Toxicity

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

Acute (short-term) fish toxicity

butan-1-ol; n-butanol

LC0: (Pimephales promelas (fathead minnow)): > 100 mg/L (96 h)

Acute (short-term) toxicity to algae and cyanobacteria

EC50 (Desmodesmus subspicatus): > 500 mg/L (72 h)

Acute (short-term) toxicity to crustacea

EC50 (Daphnia magna (Big water flea)): 1.760 mg/L (48 h)

Chronic (long-term) toxicity to aquatic invertebrate

NOEC (Daphnia magna (Big water flea)): 4,1 mg/L (21 d)

Toxicity to microorganisms

650 mg/L (16 h)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

- * Partition coefficient: n-octanol/water = 1,85 (n-butyl acetate)
- * Partition coefficient: n-octanol/water = 0,79 (butan-1-ol; n-butanol)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

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

12.6 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.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product/Packaging disposal

Do not empty into drains; dispose of this material and its container in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Waste codes/waste designations according to EWC/AVV

140603* - other solvents and solvent mixtures

Other disposal recommendations

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information

14.1 UN number or ID number

UN 1263

14.2 UN proper shipping name

Land transport (ADR/RID)

Paint related material

Sea transport (IMDG)

Paint related material

Air transport (ICAO-TI / IATA-DGR)

Paint related material

14.3 Transport hazard class(es)

Land transport (ADR/RID)

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Sea transport (IMDG) 3
Air transport (ICAO-TI / IATA-DGR) 3

14.4 Packing group

Land transport (ADR/RID) III
Sea transport (IMDG) III
Air transport (ICAO-TI / IATA-DGR) III

14.5 Environmental hazards

Land transport (ADR/RID) not applicable
Sea transport (IMDG) not applicable

14.6 Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

14.7 Maritime transport in bulk according to IMO instruments

No transport as bulk according to IBC Code.

14.8 Additional information

Land transport (ADR/RID)

Tunnel restriction code: D/E
Limited quantity (LQ): 5 ltr
Hazard identification number (Kemler No.): 30

Sea transport (IMDG)

EmS-No.: F-E, S-E
Limited quantity (LQ): 5 ltr

Air transport (ICAO-TI / IATA-DGR)

not applicable

SECTION 15: Regulatory information

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

EU legislation

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive 92/85/EEC or stricter national regulations, if applicable. Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC) or stricter national regulations, if applicable.

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]

VOC value: 845 g/l

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]

Hazard categories / Named dangerous substances

P5c FLAMMABLE LIQUIDS

Quantity 1: 5.000t; Quantity 2: 50.000t

National regulations

Observe in addition any national regulations!

Substance/product listed in the following inventories

DSL - CA

IECSC - CN

Korea Existing Chemicals Inventory(KECI) - KR

TSCA - US

VNECI - VN

15.2 Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

REACH No.	Substance name	CAS No. EC No.
01-2119484630-38	butan-1-ol; n-butanol	71-36-3 200-751-6
01-2119485493-29	n-butyl acetate	123-86-4 204-658-1

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SECTION 16: Other information

List of relevant hazard statements and/or precautionary statements from sections 2 to 15

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

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

Flam. Liq. 3	On basis of test data.
Acute Tox. 4 oral	Calculation method.
Eye Dam. 1	Calculation method.
STOT SE 3 Irritation to respiratory tract	Calculation method.
STOT SE 3 Narcotic effects	Calculation method.
Skin Irrit. 2	Calculation method.

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL: Occupational Exposure Limit Value
BLV: Biological limit values
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
CMR: Carcinogenic, Mutagenic and Reprotoxic
DIN: German Institute for Standardization / German industrial standard
DNEL: Derived No-Effect Level
EAKV: European Waste Catalogue Directive
EC: Effective Concentration
EC: European Community
EN: European Standard
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG Code: International Maritime Code for Dangerous Goods
ISO: International Organization for Standardization
LC: Lethal Concentration
LD: Lethal Dose
MWC: Maximum workplace concentration
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD: Organisation for Economic Cooperation and Development
PBT: persistent, bioaccumulative, toxic
PNEC: Predicted No Effect Concentration
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
UN: United Nations
VOC: Volatile Organic Compounds
vPvB: very persistent and very bioaccumulative

Indication of changes

* Data changed compared with the previous version.