

Safety data sheet

according to EU 2015/830

Printing date 27.10.2020

Revision: 27.10.2020

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

· **1.1 Product identifier**

· Trade name: **riag Ni 118 Brightener**

· Article number: 118300.XXX

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Electroplating auxiliary

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

riag Oberflächentechnik AG

Murgstrasse 19a

CH-9545 Wängi Tel.: +41 (0)52 369 70 70 Fax: +41 (0)52 369 70 79 info@riag.ch

· **Further information obtainable from:**

riag Technik

Tel.: +41 (0) 52 369 70 80; e-mail: info@riag.ch

· **1.4 Emergency telephone number:** 08:00 - 17:00: Tel. +41 52 369 70 80

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS06 skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 health hazard

Repr. 2 H361f Suspected of damaging fertility.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05

GHS06

GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**

but-2-yne-1,4-diol

2-Propyn-1-ol, reaction product with 1-2.5 moles of oxirane

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sodium 2-propyne-1-sulphonate
prop-2-yn-1-ol

Hazard statements

H302 Harmful if swallowed.
H331 Toxic if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H361f Suspected of damaging fertility.

Precautionary statements

P261 Avoid breathing mist/vapours/spray.
P280 Wear protective gloves / eye protection / face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
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.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 110-65-6 EINECS: 203-788-6 Reg.nr.: 01-2119489899-05	but-2-yne-1,4-diol ⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ STOT RE 2, H373; ⚠ Skin Corr. 1B, H314; ⚠ Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	≥2.5- <10%
CAS: 25749-64-8 EC number: 941-793-1 Reg.nr.: 01-2120065599-40-0000	2-Propyn-1-ol, reaction product with 1-2.5 moles of oxirane ⚠ Acute Tox. 2, H330; ⚠ Repr. 2, H361f; STOT RE 2, H373; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; STOT SE 3, H335	≥3- <10%
CAS: 107-19-7 EINECS: 203-471-2 Reg.nr.: 01-2119489016-35-0000	prop-2-yn-1-ol ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Chronic 2, H411	≥1- <2.5%
CAS: 55947-46-1 EINECS: 259-915-0 Reg.nr.: 01-2120764173-56	sodium 2-propyne-1-sulphonate ⚠ Met. Corr.1, H290; ⚠ Skin Sens. 1A, H317	≥1- ≤2.5%

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information:

Immediately remove any clothing soiled by the product.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation:

Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Mouth respiratory protective device.
Wear fully protective suit.
- **Additional information**
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**
Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Avoid contact with the eyes and skin.
- **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Prevent from spreading (e.g. by damming-in or oil barriers).
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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**
Avoid contact with the eyes and skin.
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Unsuitable material for receptacle: aluminium.
Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
Protect from frost.
Keep container tightly sealed.
Store receptacle in a well ventilated area.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Storage class:** 6.1 D
- **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

110-65-6 but-2-yne-1,4-diol

MAK (Switzerland)	Short-term value: 0.36 mg/m ³ , 0.1 ppm Long-term value: 0.36 mg/m ³ , 0.1 ppm H S SSc;
IOELV (EU)	Long-term value: 0.5 mg/m ³

107-19-7 prop-2-yn-1-ol

MAK (Switzerland)	Short-term value: 9.4 mg/m ³ , 4 ppm Long-term value: 4.7 mg/m ³ , 2 ppm H;
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· **DNELs**

110-65-6 but-2-yne-1,4-diol

Dermal	DNEL dermal	0.01 mg/cm ² (human)
	DNEL dermal systemic	0.01 mg/kg (worker) long-term
Inhalative	DNEL inhalative	0.02 mg/m ³ (worker) long-term, systemic and local
		0.02 mg/m ³ (human)

25749-64-8 2-Propyn-1-ol, reaction product with 1-2.5 moles of oxirane

Dermal	DNEL dermal systemic	0.8 mg/kg (worker) (/day)
Inhalative	DNEL inhalative long term systemic	2.8 mg/m ³ (worker)

107-19-7 prop-2-yn-1-ol

Dermal	DNEL dermal	0.83 mg/cm ² (worker) long term - systemic
	DNEL dermal systemic	3.3 mg/kg (worker) short term
Inhalative	DNEL inhalative	4.7 mg/m ³ (worker) long term - local effects
	DNEL inhalative systemic	9.4 mg/m ³ (worker) short term
	DNEL inhalative short term	9.4 mg/m ³ (worker) local effects
	DNEL inhalative long term systemic	4.7 mg/m ³ (worker)

· **PNECs**

110-65-6 but-2-yne-1,4-diol

PNEC	42.87 µg/L (soil)
	1990000 µg/L (wastewater treatment plant)
	30 µg/L (seawater)
	110 µg/L (sediment (seawater))
	1090 µg/L (sediment (freshwater))
	300 µg/L (sporadic release)
	300 µg/L (freshwater)

107-19-7 prop-2-yn-1-ol

PNEC	28 µg/L (soil)
	10000 µg/L (wastewater treatment plant)

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0.15 µg/L (seawater)
0.323 µg/L (sediment (seawater))
3.23 µg/L (sediment (freshwater))
15.3 µg/L (sporadic release)
1.53 µg/L (freshwater)

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

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Immediately remove all soiled and contaminated clothing

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Short term filter device:

Filter A/P2

EN 14387

EN 14593-1

· **Protection of hands:**

Protective gloves

EN 374 Index 6

· **Material of gloves**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.7 mm

· **Penetration time of glove material** > 480 min.

· **Eye protection:**

EN 166



Tightly sealed goggles

· **Body protection:** Apron

· **Boots made out of rubber.**

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Fluid

Colour: Light yellow

· **Odour:** Product specific

· **Odour threshold:** Not determined.

· **pH-value at 20 °C:** 5

· **Change in condition**

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: Undetermined.

· **Flash point:** Not applicable.

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· Flammability (solid, gas):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not determined.
· Density at 20 °C:	1.09 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

· **Acute toxicity**

Harmful if swallowed.

Toxic if inhaled.

- **LD/LC50 values relevant for classification:**

110-65-6 but-2-yne-1,4-diol

Oral	LD50	132 mg/kg (rat) OECD 401
Dermal	LD50	659 mg/kg (rat) OECD 402
Inhalative	LC50 (4h)	0.69 mg/L (rat) OECD 403

25749-64-8 2-Propyn-1-ol, reaction product with 1-2.5 moles of oxirane

Oral	LD50	>300-2000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC 50 (8h)	>0.5-2 mg/L (rat)

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107-19-7 prop-2-yn-1-ol

Oral	LD50	56 mg/kg (rat)
Dermal	LD50	88 mg/kg (rabbit)
Inhalative	LC50 (4h)	0.75 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 an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity 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**
Suspected of damaging fertility.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **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.

SECTION 12: Ecological information

12.1 Toxicity

· Aquatic toxicity:

110-65-6 but-2-yne-1,4-diol

LC50 (96h)	53.6 mg/L (<i>Pimephales promelas</i>)
EC50 (48h)	26.79 mg/L (<i>Daphnia magna</i>)
EC50 (72h)	1.058 mg/L (<i>Scenedesmus subspicatus</i>)

107-19-7 prop-2-yn-1-ol

LC50 (96h) (static)	4.64 mg/L (<i>Leuciscus idus</i>)
	1.53 mg/L (<i>Pimephales promelas</i>)
EC50 (24h)	11 mg/L (<i>Daphnia magna</i>)
EC10 (16h)	150 mg/L (<i>Pseudomonas putida</i>)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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.
Hand over to hazardous waste disposers.

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· **European waste catalogue**

11 01 98* other wastes containing hazardous substances

15 01 10* packaging containing residues of or contaminated by hazardous substances

· **Uncleaned packaging:**· **Recommendation:**

Packaging may be reused or recycled after cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.**SECTION 14: Transport information**· **14.1 UN-Number**· **ADR, IMDG, IATA**

UN2810

· **14.2 UN proper shipping name**· **ADR**

2810 TOXIC LIQUID, ORGANIC, N.O.S. (prop-2-in-1-ol, 1,4-BUTYNEEDIOL)

· **IMDG, IATA**

TOXIC LIQUID, ORGANIC, N.O.S. (prop-2-in-1-ol, 1,4-BUTYNEEDIOL)

· **14.3 Transport hazard class(es)**· **ADR**· **Class**

6.1 (T1) Toxic substances.

· **Label**

6.1

· **IMDG, IATA**· **Class**

6.1 Toxic substances.

· **Label**

6.1

· **14.4 Packing group**· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Warning: Toxic substances.

· **Hazard identification number (Kemler code):**

60

· **EMS Number:**

F-A,S-A

· **Stowage Category**

A

· **Stowage Code**

SW2 Clear of living quarters.

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category**

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· Tunnel restriction code	E
· IMDG	5L
· Limited quantities (LQ)	Code: E1
· Excepted quantities (EQ)	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (PROP-2-IN-1-OL, 1,4-BUTYNE-1,3-DIOL), 6.1, 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** None of the ingredients is listed.
- **Seveso category H2 ACUTE TOXIC**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **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**

None of the ingredients is listed.

- **National regulations:**
- **Information about limitation of use:** Employment restrictions concerning juveniles must be observed.
- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

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.

· **Relevant phrases**

- H226 Flammable liquid and vapour.
- H290 May be corrosive to metals.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.
- H361f Suspected of damaging fertility.
- H373 May cause damage to the kidneys, the liver, the spleen and the blood through prolonged or repeated exposure. Route of exposure: Oral.
- H411 Toxic to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport 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
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)

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DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids – Category 3

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 3: Acute toxicity - oral – Category 3

Acute Tox. 4: Acute toxicity - oral – Category 4

Acute Tox. 2: Acute toxicity - inhalation – Category 2

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

Skin Sens. 1A: Skin sensitisation – Category 1A

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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