

Safety Data Sheet acc. to OSHA HCS

Printing date 04/30/2024

Reviewed on 04/30/2024

1 Identification

Product identifier

Trade name: **REVOPOINT - ABP**

Application of the substance / the mixture: Matting agent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Graichen
Produktions- und Vertriebs-GmbH
Darmstädter Str. 127 - 129
D-64625 Bensheim
Tel.: +49(0)6251/73103
Fax: +49(0)6251/77901
e-mail: info@graichen-bensheim.de
homepage: http://www.graichen.net
REVOPOINT 3D TECHNOLOGIES INC
902, 9/F, Tinno Building, Tongfa South Rd, Xili Street,
Nanshan District, Shenzhen, 518000, P.R.China

Information department: Product Safety Department D.Sowietzki

Emergency telephone number: Medical emergency information in case of poisoning:
Graichen: During business hours :+49(0)6251 7707880
Graichen: Outside business hours: +49(0)172 7478476
Poison Information Center Mainz - 24h -
Phone: +49 (0) 6131 19240
USA / CAN : 800-424-9300 (available 24 hrs)

2 Hazard(s) identification

Classification of the substance or mixture

Flammable Aerosols 1 H222 Extremely flammable aerosol.
Gases under Pressure - Compressed gas H280 Contains gas under pressure; may explode if heated.
Eye Irritation 2A H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

Label elements

GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS02 GHS04 GHS07

Signal word

Danger

Hazard-determining components of labeling:

Hazard statements

propan-2-ol
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
May cause drowsiness or dizziness.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear eye protection / face protection.
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.
Call a poison center/doctor if you feel unwell.
If eye irritation persists: Get medical advice/attention.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Information pertaining to particular dangers for man and environment:

NFPA ratings (scale 0 - 4)



Health = 2
Fire = 4
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 2
Fire = 4
Reactivity = 3

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Other hazards

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients**Chemical characterization: Mixtures**

Description: Active substance with propellant

Dangerous components:

CAS: 106-97-8	butane (containing $\leq 0,1$ % butadiene (106-99-0)) ⚠ Flammable Gases 1, H220; ⚠ Gases under Pressure - Compressed gas, H280	25 – 50%
CAS: 67-63-0	propan-2-ol ⚠ Flammable Liquids 2, H225; ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H336	25 – 50%
CAS: 74-98-6	propane ⚠ Flammable Gases 1, H220; ⚠ Gases under Pressure - Compressed gas, H280	10 – 25%
CAS: 9005-25-8	Starch	10 – 25%
CAS: 75-28-5	isobutane (containing $\leq 0,1$ % butadiene (106-99-0)) ⚠ Flammable Gases 1, H220; ⚠ Gases under Pressure - Compressed gas, H280	< 2.5%

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

4 First-aid measures**Description of first aid measures**

- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Wash with water and acidic soap.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Seek immediate medical advice.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed: No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures**Extinguishing media**

Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

No further relevant information available.

Advice for firefighters

Protective equipment: No special measures required.

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Keep away from ignition sources

Environmental precautions:Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.**Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Reference to other sectionsSee Section 8 for information on personal protection equipment.
See Section 13 for disposal information.**Protective Action Criteria for Chemicals****PAC-1:**

CAS: 106-97-8	butane (containing $\leq 0,1$ % butadiene (106-99-0))	5500* ppm
CAS: 67-63-0	propan-2-ol	400 ppm
CAS: 74-98-6	propane	5500* ppm
CAS: 75-28-5	isobutane (containing $\leq 0,1$ % butadiene (106-99-0))	5500* ppm
CAS: 74-84-0	ethane	65000*** ppm

PAC-2:

CAS: 106-97-8	butane (containing $\leq 0,1$ % butadiene (106-99-0))	17000** ppm
CAS: 67-63-0	propan-2-ol	2000* ppm
CAS: 74-98-6	propane	17000** ppm
CAS: 75-28-5	isobutane (containing $\leq 0,1$ % butadiene (106-99-0))	17000** ppm
CAS: 74-84-0	ethane	230000*** ppm

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. PAC-3:		
CAS: 106-97-8	butane (containing $\leq 0,1$ % butadiene (106-99-0))	53000*** ppm
CAS: 67-63-0	propan-2-ol	12000** ppm
CAS: 74-98-6	propane	33000*** ppm
CAS: 75-28-5	isobutane (containing $\leq 0,1$ % butadiene (106-99-0))	53000*** ppm
CAS: 74-84-0	ethane	400000*** ppm

7 Handling and storage

. Handling:

- Precautions for safe handling
- Information about protection against explosions and fires:

Open and handle receptacle with care.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material.

. Conditions for safe storage, including any incompatibilities

- Requirements to be met by storerooms and receptacles:

Store in a cool location.

Observe official regulations on storing packagings with pressurized containers.

- Information about storage in one common storage facility:

Store away from foodstuffs.

- Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

. Specific end use(s)

No further relevant information available.

8 Exposure controls/personal protection

. Additional information about design of technical systems:

No further data; see section 7.

. Control parameters

- Components with limit values that require monitoring at the workplace:

CAS: 106-97-8 butane (containing $\leq 0,1$ % butadiene (106-99-0))

REL Long-term value: 1900 mg/m³, 800 ppmTLV Short-term value: 1000 ppm
(EX)

CAS: 67-63-0 propan-2-ol

PEL Long-term value: 980 mg/m³, 400 ppmREL Short-term value: 1225 mg/m³, 500 ppmLong-term value: 980 mg/m³, 400 ppm

TLV Short-term value: 400 ppm

Long-term value: 200 ppm

BEI, A4

CAS: 74-98-6 propane

PEL Long-term value: 1800 mg/m³, 1000 ppmREL Long-term value: 1800 mg/m³, 1000 ppm

TLV see Appendix F Minimal oxygen content (D, EX)

CAS: 9005-25-8 Starch

PEL Long-term value: 15* 5** mg/m³

*total dust **respirable fraction

REL Long-term value: 10* 5** mg/m³

*total dust **respirable fraction

TLV Long-term value: 10 mg/m³

A4

CAS: 75-28-5 isobutane (containing $\leq 0,1$ % butadiene (106-99-0))

TLV Short-term value: 1000 ppm

(EX)

- Ingredients with biological limit values:

CAS: 67-63-0 propan-2-ol

BEI 40 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: Acetone (background, nonspecific)

- Additional information:

The lists that were valid during the creation were used as basis.

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Exposure controls

- Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.

- Breathing equipment:
- Protection of hands:

Avoid contact with the eyes and skin.

Not required.

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

- General Information

- Appearance:

Form:

Aerosol

Color:

Grey

- Odor:

Nearly odorless

- Odor threshold:

Not determined.

- pH-value at 20 °C (68 °F):

6.5

- Change in condition

Boiling point/Boiling range:

-44.5 °C (-48.1 °F)

- Flash point:

-97 °C (-142.6 °F)

- Flammability (solid, gaseous):

Not applicable.

- Decomposition temperature:

Not determined.

- Ignition temperature:

Product is not selfigniting.

- Danger of explosion:

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- Explosion limits:

Lower:

1.5 Vol %

Upper:

12 Vol %

- Vapor pressure at 20 °C (68 °F):

8,300 hPa (6.200 mm Hg)

- Density:

Not determined.

- Relative density

Not determined.

- Vapor density

Not determined.

- Evaporation rate

Not applicable.

- Solubility in / Miscibility with

Water:

Fully miscible.

- Partition coefficient (n-octanol/water):

Not determined.

- Viscosity:

Dynamic:

Not determined.

- Solvent content:

Organic solvents:

83.1 %

VOC content:

84.12 %

VOC (EU) (%)

84.2 %

Solids content:

15.9 %

Other information

No further relevant information available.

10 Stability and reactivity

- Reactivity

No further relevant information available.

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Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

Possibility of hazardous reactions

No dangerous reactions known.

Conditions to avoid

No further relevant information available.

Incompatible materials:

No further relevant information available.

Hazardous decomposition products:

No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

CAS: 67-63-0 propan-2-ol

Oral	LD50	5,840 mg/kg (rat) (Acute Oral Toxicity)
Dermal	LD50	12,870 mg/kg (rab) (Acute Dermal Toxicity)
Inhalative	LC50/4h	72.6 mg/l (rat)
	LC50/6h	> 25 mg/l (rat) (Acute Inhalation Toxicity)

CAS: 69011-36-5 Oxoalkohol C13 ethoxiliert mit 5-9 Mol EO

Oral	LD50	> 10,000 mg/kg (rat)
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Primary irritant effect:

on the skin:

CAS: 67-63-0 propan-2-ol

Ätz-/Reizwirkung auf die Haut (4h)	(rabbit) (Acute Dermal Irritation/Corrosion)
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on the eye:

Irritating effect.

CAS: 67-63-0 propan-2-ol

Schwere Augenschädigung/-reizung	(rabbit) (Acute Eye Irritation/Corrosion)
----------------------------------	---

Sensitization:

No sensitizing effects known.

Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

CAS: 67-63-0 propan-2-ol

NOAEL, maternal	400 mg/kg KG/day (rat)
NOAEL, parents	500 mg/kg KG/day (Two-Generation Reproduction Toxicity)
	853 mg/kg KG/day (rat) (One-Generation Reproduction Toxicity Study)

Carcinogenic categories

IARC (International Agency for Research on Cancer)

CAS: 67-63-0 propan-2-ol

3

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

Reproductive toxicity

CAS: 67-63-0 propan-2-ol

Oral	NOAEL, Parents	500 mg/kg (rat) (Two-Generation Reproduction Toxicity)
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Specific target organ toxicity - repeated exposure

CAS: 67-63-0 propan-2-ol

STOT RE	mg/kg/day (rat)
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12 Ecological information

Toxicity

Aquatic toxicity:

CAS: 106-97-8 butane (containing ≤ 0,1 % butadiene (106-99-0))

EC50 (96h)	7.71 mg/l (Algae)
LC50 (96h)	27.98 mg/l (Fisch)

CAS: 67-63-0 propan-2-ol

EC50	> 100 mg/l (Bacteria)
EC50 (48h)	> 100 mg/l (daphnia magna/gr. Wasserfloh)
EC50 (72h)	> 100 mg/l (Scenedesmus subspicatus)
EC50 (96h)	> 1,000 mg/l (Scenedesmus subspicatus) (Freshwater Alga and Cyanobacteria, Growth Inhibiti)
LC50 (24h)	9,714 mg/l (daphnia magna/gr. Wasserfloh) (Daphnia sp. Acute Immobilisation Test)
	9,640 mg/l (Pimephales promelas (fettköpf. Ellritze)) (Fish, Acute Toxicity Test)

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LC50 (48h)	> 100 mg/l (Leuciscus idus (Goldorfe))
LC50 (96h)	> 9,640 – 10,000 mg/l (Pimephales promelas (fettköpf. Ellritze)) (Fish, Acute Toxicity Test)
LOEC (8d)	1,000 mg/l (Algae)
EC50 (3h)	> 1,000 mg/l (activated sludge) (Mikroorganismen/Wirkung auf Belebtschlamm)
NOEC (21d)	30 mg/l (daphnia magna/gr. Wasserfloh) (Daphnia magna Reproduction Test)
NOEC (96h)	1,000 mg/l (Scenedesmus subspicatus) (Freshwater Alga and Cyanobacteria, Growth Inhibiti)

CAS: 74-98-6 propane

EC50 (96h)	7.71 mg/l (Algae)
LC50 (96h)	27.98 mg/l (Fisch)

CAS: 75-28-5 isobutane (containing ≤ 0,1 % butadiene (106-99-0))

EC50 (96h)	7.71 mg/l (Algae)
LC50 (96h)	27.98 mg/l (Fisch)

Persistence and degradability**CAS: 67-63-0 propan-2-ol**

Biodegradability 30d | 70 – 84 % (aerob) ((Derterm. of the "Ready" Biodegr. Closed Bottle))

Behavior in environmental systems:

. Bioaccumulative potential

CAS: 67-63-0 propan-2-ol

Log Pow | 0.05

. Mobility in soil No further relevant information available.

Additional ecological information:

. General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

. PBT: Not applicable.

. vPvB: Not applicable.

. Other adverse effects No further relevant information available.

13 Disposal considerations**Waste treatment methods**

. Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

. Recommendation: Disposal must be made according to official regulations.
. Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**UN-Number**

. DOT, ADR, IMDG, IATA UN1950

UN proper shipping name

. DOT Aerosols, flammable
. ADR 1950 AEROSOLS
. IMDG AEROSOLS
. IATA AEROSOLS, flammable

Transport hazard class(es)

. DOT



. Class 2.1 Gases
. Label 2.1

. ADR



. Class 2.5F Gases
. Label 2.1

. IMDG, IATA



. Class 2.1 Gases

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. Label	2.1
. Packing group . DOT, ADR, IMDG, IATA	Void
. Environmental hazards:	Not applicable.
. Special precautions for user . Hazard identification number (Kemler code): . EMS Number: . Stowage Code	Warning: Gases - F-D,S-U SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters. SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
. Segregation Code	
. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
. Transport/Additional information:	
. ADR . Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
. IMDG . Limited quantities (LQ) . Excepted quantities (EQ)	1L Code: E0 Not permitted as Excepted Quantity
. UN "Model Regulation":	UN 1950 AEROSOLS, 2.1

15 Regulatory information

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

No further relevant information available.

. Sara

. Section 355 (extremely hazardous substances):

None of the ingredients is listed.

. Section 313 (Specific toxic chemical listings):

CAS: 67-63-0 | propan-2-ol

. TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

. Hazardous Air Pollutants

None of the ingredients is listed.

. Proposition 65

. Chemicals known to cause cancer:

None of the ingredients is listed.

. Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

. Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

. Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

. Carcinogenic categories

. EPA (Environmental Protection Agency)

None of the ingredients is listed.

. TLV (Threshold Limit Value)

CAS: 67-63-0 | propan-2-ol

A4

CAS: 9005-25-8 | Starch

A4

. MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

. NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

. GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

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. Hazard pictograms



GHS02 GHS04 GHS07

. Signal word

Danger

. Hazard-determining components of labeling:

. Hazard statements

propan-2-ol

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.

Causes serious eye irritation.

May cause drowsiness or dizziness.

. Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear eye protection / face protection.

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.

Call a poison center/doctor if you feel unwell.

If eye irritation persists: Get medical advice/attention.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight. Store in a well-ventilated place.

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Dispose of contents/container in accordance with local/regional/national/international regulations.

. Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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.

. Department issuing SDS:

Environment protection department.

. Contact:

. Date of preparation / last revision

04/30/2024 / 2201

. Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flammable Gases 1: Flammable gases – Category 1

Flammable Aerosols 1: Aerosols – Category 1

Gases under Pressure - Compressed gas: Gases under pressure – Compressed gas

Flammable Liquids 2: Flammable liquids – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

. * Data compared to the previous version altered.

US