



## Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2022

Reviewed on 12/20/2022

### 1 Identification

- **Product identifier**
- **Trade name:** AR 600-56
- **Article number:** AR 600-56
- **Application of the substance / the mixture**  
Intermediate product for the electronics industry. For industrial and commercial use only.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Allresist GmbH  
Am Biotop 14  
15344 Strausberg  
GERMANY
- 
- E-Mail: [info@allresist.de](mailto:info@allresist.de)  
Tel.: +49 3341 35 93 0
- **Information department:** Sales
- **Emergency telephone number:**  
Poison center of the Charité Berlin:  
+4930 30686700  
E-Mail: [gifnotruf@charite.de](mailto:gifnotruf@charite.de)

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS07

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).

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· **Hazard pictograms**

GHS02   GHS07   GHS08

· **Signal word** *Danger*· **Hazard-determining components of labeling:**

4-methylpentan-2-one  
propan-2-ol

· **Hazard statements**

Highly flammable liquid and vapor.  
Causes serious eye irritation.  
Suspected of causing cancer.  
May cause drowsiness or dizziness.

· **Precautionary statements**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P312 Call a poison center/doctor if you feel unwell.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P370+P378 In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2  
Fire = 3  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH 2 Health = 2  
FIRE 3 Fire = 3  
REACTIVITY 0 Reactivity = 0

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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:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

67-63-0	propan-2-ol	50-100%
108-10-1	4-methylpentan-2-one	10-25%

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult 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:**  
CO<sub>2</sub>, 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**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

67-63-0	propan-2-ol	400 ppm
108-10-1	4-methylpentan-2-one	75 ppm

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· **PAC-2:**

67-63-0	propan-2-ol	2000* ppm
108-10-1	4-methylpentan-2-one	500 ppm

· **PAC-3:**

67-63-0	propan-2-ol	12000** ppm
108-10-1	4-methylpentan-2-one	3000* ppm

· **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.

## 7 Handling and storage

· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**· **Storage:**· **Requirements to be met by storerooms and receptacles:** Store in a cool location.· **Information about storage in one common storage facility:** Not required.· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· **Recommended storage temperature:** 10-22°C· **Storage class:** 3· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Control parameters**· **Components with limit values that require monitoring at the workplace:****67-63-0 propan-2-ol**PEL Long-term value: 980 mg/m<sup>3</sup>, 400 ppmREL Short-term value: 1225 mg/m<sup>3</sup>, 500 ppmLong-term value: 980 mg/m<sup>3</sup>, 400 ppm

TLV Short-term value: 400 ppm

Long-term value: 200 ppm

BEI, A4

**108-10-1 4-methylpentan-2-one**PEL Long-term value: 410 mg/m<sup>3</sup>, 100 ppmREL Short-term value: 300 mg/m<sup>3</sup>, 75 ppmLong-term value: 205 mg/m<sup>3</sup>, 50 ppm

TLV Short-term value: 75 ppm

Long-term value: 20 ppm

BEI, A3

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· **Ingredients with biological limit values:**

**67-63-0 propan-2-ol**

BEI 40 mg/L  
 Medium: urine  
 Time: end of shift at end of workweek  
 Parameter: Acetone (background, nonspecific)

**108-10-1 4-methylpentan-2-one**

BEI 1 mg/L  
 Medium: urine  
 Time: end of shift  
 Parameter: MIBK

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

· **Exposure controls**

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

· **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.  
 Store protective clothing separately.  
 Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**

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



Protective gloves

· **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

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## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

· Color:	Colorless
· Odor:	Alcohol-like
· Odor threshold:	Not determined.
· Melting point/Melting range:	-89.5 °C (-129.1 °F)
· Boiling point/Boiling range:	82 °C (179.6 °F)
· Flammability (solid, gaseous):	Highly flammable.
· Explosion limits:	
· Lower:	1.2 Vol %
· Upper:	12 Vol %
· Flash point:	13 °C (55.4 °F)
· Ignition temperature:	425 °C (797 °F)
· Decomposition temperature:	Not determined.
· pH-value at 20 °C (68 °F):	6-8
· Viscosity:	
· Kinematic:	Not determined.
· Viscosity @100°C:	
· Dynamic at 20 °C (68 °F):	2.45 mPas
· Solubility in / Miscibility with	
· Water at 20 °C (68 °F):	220 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Vapor pressure at 20 °C (68 °F):	48 hPa (36 mm Hg)
· Density at 20 °C (68 °F):	0.78-0.8 g/cm <sup>3</sup> (6.5091-6.676 lbs/gal)
· Relative density	Not determined.
· Density:	Not determined.
· Vapor density	Not determined.

### · Other information

#### · Appearance:

· Form: Fluid

#### · Important information on protection of health and environment, and on safety.

#### · Auto igniting:

Product is not selfigniting.

#### · Danger of explosion:

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

#### · Solvent content:

#### · Organic solvents:

100.0 %

#### · VOC content:

100.00 %

780-800 g/l / 6.51-6.68 lb/gal

#### · Change in condition

#### · Evaporation rate

Not determined.

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.

#### · 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.

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· **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

### · LD/LC50 values that are relevant for classification:

Oral	Acute Toxicity Estimate of ingredient (ATE) oral	>5,000 mg/kg (Worker)
Dermal	Acute toxicity estimates	>2,000 mg/kg (Worker)
Inhalative	Acute toxicity Estimate inhalative (4h)	>20 mg/l (Worker)

### 67-63-0 propan-2-ol

Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50 (4h)	30 mg/l (rat)

### 108-10-1 4-methylpentan-2-one

Oral	LD50	2,080 mg/kg (rat)
Dermal	LD50	16,000 mg/kg (rab)
Inhalative	LC50 (4h)	8.3-16.6 mg/l (rat)

- **on the eye:** Causes serious eye irritation.
- **Carcinogenicity** Suspected of causing cancer.
- **Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.
- **Additional toxicological information:**

### · Carcinogenic categories

#### · IARC (International Agency for Research on Cancer)

67-63-0	propan-2-ol	3
108-10-1	4-methylpentan-2-one	2B

#### · NTP (National Toxicology Program)

None of the ingredients is listed.

#### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## 12 Ecological information

### · Toxicity

#### · Aquatic toxicity:

#### 67-63-0 propan-2-ol

LC50 (96h) mg/ltr.	9,640 mg/ltr (Fish)
LC50 (48h) mg/ltr	>100 mg/ltr (Fish, minnows)
EC50 (48h)	>100 mg/l (Daphnia magna)
	13,299 mg/l (daphnia)
EC50 (72h)	>100 mg/l (algae)

#### 108-10-1 4-methylpentan-2-one

LC50 (96h) mg/ltr.	>179 mg/ltr (Zebrafisch) (OECD 203)
LC50 (48h) mg/ltr	>100 mg/ltr (daphnia)
EC50 (48h)	980 mg/l (algae)

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NOEC	>200 mg/l (daphnia)	
	30-35 mg/l (daphnia)	
<b>· Persistence and degradability</b>		
67-63-0	propan-2-ol	95 %
108-10-1	4-methylpentan-2-one	83 %
<b>· Bioaccumulative potential</b>		
108-10-1	4-methylpentan-2-one	1,31
<ul style="list-style-type: none"> <li>· <b>Mobility in soil</b> No further relevant information available.</li> <li>· <b>Results of PBT and vPvB assessment</b></li> <li>· <b>PBT:</b> Not applicable.</li> <li>· <b>vPvB:</b> Not applicable.</li> <li>· <b>Other adverse effects</b> No further relevant information available.</li> <li>· <b>Additional ecological information:</b></li> <li>· <b>General notes:</b>  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.</li> </ul>		

## 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

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>	UN1993
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	Flammable liquids, n.o.s. (Isopropanol, Methyl isobutyl ketone) FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), METHYL ISOBUTYL KETONE)
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>	
	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	3 Flammable liquids 3

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· **IMDG, IATA**

· **Class** 3 Flammable liquids  
 · **Label** 3

· **Packing group**  
 · **DOT, IMDG, IATA** II

· **Environmental hazards:** Not applicable.

· **Special precautions for user** Warning: Flammable liquids  
 · **Hazard identification number (Kemler code):** 33  
 · **EMS Number:** F-E, S-E  
 · **Stowage Category** B

· **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**  
 · **Quantity limitations** On passenger aircraft/rail: 5 L  
 On cargo aircraft only: 60 L

· **IMDG**  
 · **Limited quantities (LQ)** 1L  
 · **Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1993 FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL), METHYL ISOBUTYL KETONE), 3, II

### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture: (Substances not listed)**

None of the ingredients is listed.

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

108-10-1 | 4-methylpentan-2-one

· **Proposition 65**

· **Chemicals known to cause cancer:**

108-10-1 | 4-methylpentan-2-one

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· <b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause developmental toxicity:</b>
108-10-1   4-methylpentan-2-one

· <b>Carcinogenic categories</b>
· <b>EPA (Environmental Protection Agency)</b>
108-10-1   4-methylpentan-2-one
I

· <b>TLV (Threshold Limit Value)</b>
67-63-0   propan-2-ol
A4

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.

· <b>GHS label elements</b>
The product is classified and labeled according to the Globally Harmonized System (GHS).
· <b>Hazard pictograms</b>
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>GHS02</p> </div> <div style="text-align: center;">  <p>GHS07</p> </div> <div style="text-align: center;">  <p>GHS08</p> </div> </div>
· <b>Signal word Danger</b>
· <b>Hazard-determining components of labeling:</b>
4-methylpentan-2-one
propan-2-ol
· <b>Hazard statements</b>
Highly flammable liquid and vapor.
Causes serious eye irritation.
Suspected of causing cancer.
May cause drowsiness or dizziness.
· <b>Precautionary statements</b>
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a poison center/doctor if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.



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- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 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

· **Disclaimer**

This safety data sheet contains only safety relevant information. The information is based on the state of our knowledge at the time of revision, however, it does not constitute a guarantee of product properties, product information or product specifications and does not establish a contractual legal relationship. This document is only valid in its unchanged form. In the event of changes by third parties, the exhibitor accepts no responsibility for form and content or for any damages or claims arising from such changes. The information is not transferable to other products. If the product named in this safety data sheet is mixed, blended or processed with other materials or is subjected to processing, the information in this safety data sheet cannot be transferred to the new material produced in this way, unless expressly stated otherwise. The data sheet does not release the user from the obligation to ensure that he acts in accordance with all regulations in connection with his activity.

· **Department issuing SDS:** Quality Management department

· **Contact:** SDS authorized Person

· **Date of preparation / last revision** 12/20/2022

· **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)

HMS: 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 Liquids 2: Flammable liquids – Category 2

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

Carcinogenicity 2: Carcinogenicity – Category 2

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

· **\* Data compared to the previous version altered.**