

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 1 of 11

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

1.1 Product identifier

Trade name: Developer AR 600-55, -56

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

General use: Intermediate for electronic industry

1.3 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

1.4 Emergency telephone number

Telephone: +49 (0)33 41-35 93-0
Only available during office hours.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 2; H225 Highly flammable liquid and vapour.
Acute Tox. 4; H332 Harmful if inhaled.
Eye Irrit. 2; H319 Causes serious eye irritation.
STOT SE 3; H335, H336 May cause respiratory irritation. May cause drowsiness or dizziness.
(EUH066) Repeated exposure may cause skin dryness or cracking.

Classification according to Directive 67/548/EEC or 1999/45/EC

F; R11 Highly flammable.
Xn; R20 Harmful by inhalation.
Xi; R36/37 Irritating to eyes and respiratory system.
R66 Repeated exposure may cause skin dryness or cracking.

2.2 Label elements

Labelling (CLP)



Signal word:

Danger

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Date of print: 21/5/2015

Version: 5

Language: en-GB,IE

Page: 2 of 11

Hazard statements:	H225	Highly flammable liquid and vapour.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	H336	May cause drowsiness or dizziness.
	EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements:	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P261	Avoid breathing vapours.
	P280	Wear protective gloves/protective clothing/eye protection.
	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.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Labelling (67/548/EEC or 1999/45/EC)



F



Xn

highly flammable harmful

R phrase(s):	R 11	Highly flammable.
	R 20	Harmful by inhalation.
	R 36/37	Irritating to eyes and respiratory system.
	R 66	Repeated exposure may cause skin dryness or cracking.
S phrase(s):	S 7/9	Keep container tightly closed and in a well-ventilated place.
	S 16	Keep away from sources of ignition. - No smoking.
	S 24/25	Avoid contact with skin and eyes.
	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S 29	Do not empty into drains.

Special labelling

Text for labelling: Contains Isopropyl alcohol and 4-Methylpentan-2-one.

2.3 Other hazards

High concentrations of vapours irritate the eyes and mucous membranes.
Higher doses may lead to a narcotic effect.
Prolonged/repetitive skin contact may cause skin defatting or dermatitis.
May cause sensitisation especially in sensitive humans.

SECTION 3: Composition / information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation:

Mixture containing the substances listed below:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 3 of 11

Hazardous ingredients:

Ingredient	Designation	Content	Classification
EC No. 200-661-7 CAS 67-63-0	Isopropyl alcohol	50 - 75 %	DSD/DPD: F; R11. Xi; R36. R67. CLP: Flam. Liq. 2; H225. Eye Irrit. 2; H319. STOT SE 3; H336.
EC No. 203-550-1 CAS 108-10-1	4-Methylpentan-2-one	25 - 50 %	DSD/DPD: F; R11. Xn; R20. R66. Xi; R36/37. CLP: Flam. Liq. 2; H225. Acute Tox. 4; H332. Eye Irrit. 2; H319. STOT SE 3; H335. (EUH066).

SECTION 4: First aid measures

4.1 Description of first aid measures

- General information: If you feel unwell, seek medical advice. Position and transport victim on their side. In case of respiratory distress, bring into semi-upright, seated position.
- In case of inhalation: Move victim to fresh air. Do not allow victim to become chilled. Keep victim warm. In case of irregular breathing or respiratory arrest provide artificial respiration. Seek medical attention.
- Following skin contact: Immediately remove all contaminated clothing. Thoroughly wash skin with soap and water. In case of skin reactions, consult a physician.
- After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.
- After swallowing: Rinse mouth immediately and drink plenty of water.
Do not induce vomiting. Immediately get medical attention.
Do not give fatty oils and milk.

4.2 Most important symptoms and effects, both acute and delayed

- In case of inhalation:
Mucous membrane irritation, cough, shortage of breath. Risk of resorption. Pulmonary edema is possible.
Other symptoms: Headache, dizziness, nausea, inebriation, narcosis.
- In case of ingestion:
Nausea, vomiting, abdominal pain, gastrointestinal complaints, blood pressure drop.
Risk of resorption.
- After contact with skin: Repeated exposure may cause skin dryness or cracking.
May cause irritations. Danger of cutaneous absorption.

4.3 Indication of any immediate medical attention and special treatment needed

Attention in case of vomiting and stomach pumping: danger of aspiration. Accelerate intestinal transit. Rinse mouth immediately and drink plenty of water. Give sodium sulfate as laxative (1 tablespoon in 1 glass of water) with plenty of activated coal. Otherwise, continue with symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

- Carbon dioxide, extinguishing powder, water fog.
In case of large fires water fog or alcohol resistant foam.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 4 of 11

Extinguishing media which must not be used for safety reasons:

strong water jet

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. Liquid evaporates quickly.
Vapours are heavier than air and will spread at floor level.
Vapours can form explosive mixtures with air. Beware of reignition.
In case of fire may be liberated: Carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained breathing apparatus.

Additional information:

Hazchem-Code: •3YE

Use fine water spray to cool endangered containers.

Suppress gases/vapours/mists with water spray jet.

Do not allow fire water to penetrate into surface or ground water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Remove persons not involved upwind.
Wear suitable protective clothing. Do not breathe vapours. Provide adequate ventilation.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.
Risk of explosion if the liquid enters the sewage system.
If necessary notify appropriate authorities.

6.3 Methods and material for containment and cleaning up

Dam spills and pump to remove. Close all lower level rooms. Contact expert.
Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal.

Additional information:

In case of spills of large quantities: Seal off endangered area. Restrict access to affected areas. In neighborhoods and industrial areas, warn inhabitants.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.

Wear protective equipment. Take all precautions necessary to avoid contact with skin, eye and mucous membranes and to avoid inhaling product vapours. Wear protective equipment.

Precautions against fire and explosion:

Take precautionary measures against static discharges. Keep away from sources of ignition. - No smoking. Avoid sparks. Do not use any spark discharging tools/utensils. With air, vapours form potentially explosive mixtures, which are heavier than air.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 5 of 11

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place.
Keep away from heat sources, sparks and open flames.
Protect against direct sunlight.
Storage temperature: 10 °C up to 22 °C.

Hints on joint storage: Do not store together with combustible or self-igniting materials or any highly flammable solids. Avoid contact with strong oxidizing agents.

Storage class: 3 = Flammable liquids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
67-63-0	Isopropyl alcohol	Great Britain: WEL-STEL	1250 mg/m ³ ; 500 ppm
		Great Britain: WEL-TWA	999 mg/m ³ ; 400 ppm
		Ireland: 15 minutes	400 ppm
		Ireland: 8 hours	200 ppm
108-10-1	4-Methylpentan-2-one	Europe: IOELV: STEL	208 mg/m ³ ; 50 ppm
		Europe: IOELV: TWA	83 mg/m ³ ; 20 ppm
		Great Britain: WEL-STEL	416 mg/m ³ ; 100 ppm
		Great Britain: WEL-TWA	208 mg/m ³ ; 50 ppm
		Ireland: 15 minutes	208 mg/m ³ ; 50 ppm (May be absorbed through the skin.)
		Ireland: 8 hours	83 mg/m ³ ; 20 ppm (May be absorbed through the skin.)

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
108-10-1	4-Methylpentan-2-one	Great Britain: BMGV, urine	20 µmol/L	4-methylpentan-2-one	end of exposure or end of shift

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded. Use filter type A (= against vapours of organic substances) according to EN 14387.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Date of print: 21/5/2015

Version: 5

Language: en-GB,IE

Page: 6 of 11

Hand protection: Protective gloves according to EN 374.
Glove material: PE/EVAL/PE - polyethylene/ethylene-vinyl-alcohol-copolymer/polyethylene.
Breakthrough time: >480 min.
Unsuitable materials: Nitrile rubber, butyl caoutchouc (butyl rubber), fluoro rubber.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Flame retardant protective clothing.

General protection and hygiene measures:
Use only non-sparking tools. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.
Do not breathe vapour/aerosol. Avoid contact with skin and eyes.
Take off immediately all contaminated clothing.
When using do not eat, drink or smoke.
Wash hands before breaks and after work.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Form: liquid
Colour: colourless, clear

Odour: alcoholic

Odour threshold: no data available

pH value: neutral

Melting point/freezing point: no data available

Initial boiling point and boiling range: 82.4 °C (Isopropyl alcohol)

Flash point/flash point range: 12 °C (Isopropyl alcohol)

Evaporation rate: no data available

Flammability: Highly flammable liquid and vapour.

Explosion limits: LEL (Lower Explosion Limit): 1.20 Vol-% (4-Methylpentan-2-one)
UEL (Upper Explosive Limit): 12.00 Vol-% (Isopropyl alcohol)

Vapour pressure: at 20 °C: 44 hPa (Isopropyl alcohol)
at 50 °C: 225 hPa (Isopropyl alcohol)

Vapour density: no data available

Density: at 20 °C: 0.78 - 0.80 g/mL

Water solubility: at 20 °C: soluble

Partition coefficient: n-octanol/water: no data available

Auto-ignition temperature: no data available

Thermal decomposition: no data available

Viscosity, dynamic: no data available

Explosive properties: Vapours can form explosive mixtures with air.

Oxidizing characteristics: no data available

9.2 Other information

Ignition temperature: 425 °C (Isopropyl alcohol)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 7 of 11

SECTION 10: Stability and reactivity

10.1 Reactivity

Highly flammable liquid and vapour. Vapours can form explosive mixtures with air.

10.2 Chemical stability

Product is stable under normal storage conditions.

10.3 Possibility of hazardous reactions

Do not expose to high temperature. Danger of bursting and explosion.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.

10.5 Incompatible materials

Oxidising agent, pyrophoric solids

10.6 Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide and carbon dioxide.

Thermal decomposition: no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Toxicological effects:

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Lack of data.

Eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335, H336 = May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

Information about Isopropyl alcohol:

Rat, oral: 4570 mg/kg.

Rabbit, dermal: 13400 mg/kg.

Rat, inhalative: 30 mg/L/4h.

Information about 4-Methylpentan-2-one:

Rat, oral: 2080 mg/kg.

Rabbit, dermal: > 16000 mg/kg.

Rat, inhalative: 8.3 - 16.6 mg/L/4h.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 8 of 11

Symptoms

In case of inhalation:

Mucous membrane irritation, cough, shortage of breath. Risk of resorption. Pulmonary edema is possible.

Other symptoms: Headache, dizziness, nausea, inebriation, narcosis.

In case of ingestion:

Nausea, vomiting, abdominal pain, gastrointestinal complaints, blood pressure drop. Risk of resorption.

After contact with skin: Repeated exposure may cause skin dryness or cracking. May cause irritations. Danger of cutaneous absorption.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Information about Isopropyl alcohol:

Algae toxicity:

EC50 Green algae: 17400 mg/L/24h.

Bacterial toxicity:

EC5 Pseudomonas putida: 1050 mg/L/16h.

Daphnia toxicity:

EC50 Daphnia magna (Big water flea): 13299 mg/L/48h.

Fish toxicity:

LC50 Lepomis macrochirus (bluegill): 1400 mg/L/96h.

12.2. Persistence and degradability

Further details:

Information about Isopropyl alcohol and 4-Methylpentan-2-one: Easily bio-degradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

General information:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number:

14 06 03* = other solvents and solvent mixtures

* = Evidence for disposal must be provided.

Recommendation:

Recycling or special waste incineration.

Do not dispose of with household waste.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 9 of 11

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.

Additional information

Handle empty containers with care. Incineration may cause explosion.

SECTION 14: Transport information

14.1 UN number

ADR/RID, IMDG, IATA: UN 1993

14.2 UN proper shipping name

ADR/RID, IMDG, IATA: UN 1993, FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol, Methyl isobutyl ketone solution)

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1

IMDG: Class 3, Subrisk -

IATA: Class 3



14.4 Packing group

ADR/RID, IMDG, IATA: II

14.5 Environmental hazards

Marine pollutant: No

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board: ADR/RID: Kemmler-number 33, UN number 1993

Hazard label: 3

Special provisions: 274 601 640D

Limited quantities: 1L

EQ: E2

Contaminated packaging - Instructions: P001 - IBC02 - R001

Special provisions for packing together: MP19

Portable tanks - Instructions: T7

Portable tanks - Special provisions: TP1 TP8 TP28

Tank coding: LGBF

Tunnel restriction code: D/E

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 10 of 11

Sea transport (IMDG)

EmS: F-E, S-E
Special provisions: 274
Limited quantities: 1L
EQ: E2
Contaminated packaging - Instructions: P001
Contaminated packaging - Provisions: -
IBC - Instructions: IBC02
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T7
Tank instructions - Provisions: TP1, TP8, TP28
Stowage and handling: Category B.
Properties and observations: -

Air transport (IATA)

Hazard: Flammable liquid
EQ: E2
Passenger Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Special Provisioning: A3
ERG: 3H

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

SECTION 15: Regulatory information

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

National regulations - Great Britain

Hazchem-Code: +3YE

National regulations - EC member states

Labelling of packaging with <= 125mL content



Signal word:

Danger

Hazard statements:

H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements:

P261 Avoid breathing vapours.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010



Developer AR 600-55, -56

Revision date: 23/3/2015

Version: 5

Language: en-GB,IE

Date of print: 21/5/2015

Page: 11 of 11

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Further information

Wording of the H-phrases under paragraph 2 and 3:

H225 = Highly flammable liquid and vapour.

H319 = Causes serious eye irritation.

H332 = Harmful if inhaled.

H335 = May cause respiratory irritation.

H336 = May cause drowsiness or dizziness.

EUH066 = Repeated exposure may cause skin dryness or cracking.

Wording of the R-phrases under section 2 and 3:

R 11 = Highly flammable.

R 20 = Harmful by inhalation.

R 36 = Irritating to eyes.

R 36/37 = Irritating to eyes and respiratory system.

R 66 = Repeated exposure may cause skin dryness or cracking.

R 67 = Vapours may cause drowsiness and dizziness.

Reason of change: Changes in section 1: product name Gb

Changes in section 2: P-phrases, label

Changes in section 5-9, 12, 13, 15: General revision

Changes in section 14: IMDG 2015

Date of first version: 29/10/2010

Department issuing data sheet

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

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

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.