1. Identification of the substance or mixture and of the company

1.1. Product identifier:
Trade name / designation:
TEST INK
UFI-Codes: Test ink PINK 22 mN/m - 907Q-NPRW-0C03-RMRU
Test ink PINK 24 mN/m - 567Q-PP4P-MC03-29WY
Test ink PINK 26 mN/m - 2C7Q-PPHG-7C03-D033

1.2 Relevant identified uses of the substance or mixture and uses advised against
1.2.1 Uses of the substance or mixture:
Determination of the surface tension and surface cleanliness of solids (films / moulded parts) made of plastic, metal, glass etc.
1.2.2 Uses advised against:
Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).
1.3 Details of the supplier of the safety data sheet

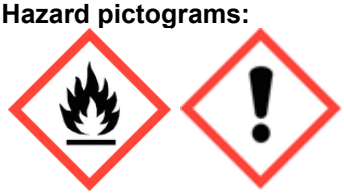
Company name	arcotest GmbH
Address	Rotweg 25 71297 Mönsheim, Germany
Phone	+49 7044 9022 70
Fax	+49 7044 9022 69
Contact for information	Mrs Anca Muresan
E-mail	info@arcotest.info
Website	www.arcotest.info
1.4 EMERGENCY TELEPHONE NUMBER:	**+49 170 5351 781** (24h in German and English)

2. Possible Dangers

2.1 Classification of the mixture:
Regulation (EC) No. 1272/2008

Highly flammable liquids, category 2	H225
Eye irritation, category 2	H319

Additional information:
Full text of H and EUH phrases: see under section 16.
2.2 Labelling elements
Labelling in accordance with Regulation (EG) No. 1272/2008 [CLP]
Hazard pictograms:



Signal word:
Danger
Hazard-determining components of labeling:
Ethanol
Hazard statements:

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation

Precautionary statements:
Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P233	Keep container tightly closed.
P241	Ground/bond container and receiving equipment.
P243	Take precautionary measures against static discharges.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed
P501	Dispose of content / container according to local / regional / national / international regulations.

Only intended for commercial users.

2.3 Other hazards:

No additional information is available.

Results of PBT- and vPvB assessment (Ethanol 642 – 99,9 %):

PBT: The product does not meet the PBT criteria as per regulation (EG) No. 1907/2006, Annex XIII.

vPvB: The product does not meet the vPvB criteria as per regulation (EG) No. 1907

3. Composition / Information on Ingredients

3.2 Mixtures

Hazardous ingredients

Designation				
CAS No.	EC No.	REACH No.	Index No.	%
Classification in accordance with Regulation (EG) No. 1272 [CLP]				MG in g/mol

Ethanol - C2H5OH / C2H6O				
64-17-5	200-578-6	01-2119457610-43-XXXX	603-002-00-5	70-100%
H225				46.07 g/mol

Preparation of ethanol denatured with MEK and chromophoric components.

Additional information:

Full text of H and EUH phrases: see under section 16.

4. First Aid Measures

4.1 Description of first aid measures

After inhalation:

Supply fresh air

After skin contact:

Rinse with plenty of water. Remove contaminated clothing.

After eye contact:

Rinse with plenty of water. Consult an eye specialist immediately.

After ingestion:

Drink plenty of water immediately (maximum 2 glasses). Consult a doctor

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects, respiratory paralysis, dermatitis, dizziness, narcosis, intoxication, euphoria, nausea, vomiting, headache

Degreasing effect with the formation of dry and cracked skin.

4.3 Indication of any immediate medical attention or special treatment needed

No information available.

5. Fire-fighting Measures

5.1 Extinguishing agents:

Carbon dioxide (CO_2), foam, extinguishing powder, water

5.2 Specific hazards arising from the substance or mixture

Flammable substances, vapours are heavier than air and spread over the floor.

Explosive mixtures with air may form at ambient temperatures. Watch out that the fire does not reignite.

Hazardous combustion gases or vapours may form in case of fire.

5.3 Advice for fire-fighters

Wear self-contained breathing apparatus in case of fire

Additional information:

Use a water spray jet to cool closed containers near to the source of the fire. Prevent extinguishing water from entering the surface water or ground water system.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid substance contact. Do not inhale vapour/aerosol. Ensure adequate ventilation. Evacuate the danger zone, observe emergency procedures, consult an expert.

Emergency services

Protective equipment: see section 8

6.2 Environmental precautions:

Do not empty into drains. Risk of explosion.

6.3 Methods and material for containment and cleaning up

Please note possible material restrictions! (Information in section 7 or section 10)

Absorb with liquid-binding material, e.g. Chemizorb®. Send for disposal. Clean up area.

6.4 Reference to other sections

See section 7 for notes on safe handling.

See section 8 for notes on personal protective equipment.

Refer to section 13 for disposal information

7. Handling and Storage

7.1 Precautions for safe handling

Protective measures:

Observe the instructions on the label.

Keep away from open flames, hot surfaces and ignition sources. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage facilities and containers:

Keep containers tightly closed in a dry and well-ventilated place. Keep away from heat and ignition sources.

Recommended storage temperature: +15°C to 25°C.

7.3 Specific end uses:

There are no other specific end uses other than those referred to in section 1.

8. Exposure Limitation and Control / Personal Protective Equipment

8.1 Control parameters

Components with limit values that require monitoring at the workplace

8.1.2 Biological limit values:

TRGS 900 (Ethanol 642 – 99.9%)

Name:	Ethanol (64-17-5)
Value (AGW):	200ppm; 380mg/m³
Peak limit:	Exceedance factor 4
Duration	15 min, mean value; 4 times per shift; after 1h
Category	II—substances with an absorptive effect
Name:	Ethyl methyl ketone (78-93-3)
Value (AGW):	200 ml/m³
	600mg/m³
Peak limit:	1

Category for short-term values: Category I: substances for which the localised effect has an assigned limit value or for substances with a sensitising effect in respiratory passages.

There is no need to be concerned about the risk of foetal damage when complying with the workplace limit values (AGW) and the biological limit values (BGW)

EC value (ECTLV)

Short-term value:	300 ppm; 900 mg/m³
Daily average value:	200 ppm; 600 mg/m³

Biological tolerance values for occupational exposure – Germany (BAT):

5 mg/l Parameter: 2-Butanone
Test material: urine
Sampling time: end of exposure, end of shift

8.2 Exposure limitation and control

Take the normal precautions when handling chemicals.

8.2.1 Appropriate engineering controls:
The method for measuring the workplace atmosphere must comply with the requirements of DIN EN 482 and DIN 689.

8.2.2 Personal protective equipment:
Body protection needs to be selected specifically for the workplace based on the concentration and volume of hazardous substances. The chemical resistance of the protective equipment should be ascertained with the respective supplier.
As work is generally carried out with very small quantities, there is less need for personal protective equipment with the exception of appropriate hand protection if used carefully and properly with a brush or pen application as long as skin contact can be excluded. It is advisable to use special skin barrier cream to protect the skin.

Hygiene measures:
Change contaminated clothing immediately. Preventative skin protection. Wash hands and face after finishing work.

Eye protection:
Safety goggles

Hand protection:

In full contact:	Hand protection material: Butyl rubber,
	Layer thickness 0.50 mm, > 8h breakthrough time
With splash contact:	Hand protection material: nitrile rubber,
	Layer thickness 0.50 mm, >120 min breakthrough time

Gloves made of the following materials are not suitable:
Nitrile rubber/natural latex
The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the resultant standard EN 374, for example KCL 898 Butojet® (full contact), KCL 730 Camatril® Velours (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests according to EN374 with samples of the recommended glove types.
This recommendation applies only for the product mentioned in this safety data sheet that is supplied for the purpose specified by us. If it is dissolved in or mixed with other substances and under conditions deviating from EN374, you will need to contact suppliers of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell).

Respiratory protection:
Required when vapours/aerosols are generated.
Recommended filter type: filter A
The operator must ensure that the maintenance, cleaning and testing of breathing apparatus is carried out and documented in accordance with the manufacturer's user information.

8.2.3 Environmental exposure limitation and control
Do not empty into drains. Risk of explosion.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Form:	liquid
Colour:	pink
Odour:	alcohol-like
Odour threshold:	no information available
pH value:	no information available
Melting point:	no information available
Boiling point / boiling range:	no information available
Flash point:	approx. 11-13°C
Evaporation rate:	no information available
Flammability:	no information available
Lower explosion limit:	>1.3 % vol
Upper explosion limit:	15 % vol
Vapour pressure:	(20°C): 59 hPa
Relative vapour density:	no information available
Relative density:	no information available
Water solubility:	(20°C) soluble
Partition coefficient; n Octanol/water	Ethanol 642: log Pow: -0.31 (25°C) Method: (experimental) (lit.) Bioaccumulation is not expected (log Pow <1)

Autoignition temperature:	no information available.
Decomposition temperature:	no information available
Viscosity, dynamic:	no information available
Explosive properties:	no information available.
Oxidising properties:	no information available.
Ignition temperature:	no information available
Particle characteristics:	not relevant (liquid)

9.2. Other information

Information on physical hazard classes no additional information available

10. Stability and Reactivity

10.1 Reactivity:

Vapours may form an explosive mixture with air.

10.2 Chemical stability:

The product is chemically stable under normal ambient conditions (room temperature).

10.3 Possibility of hazardous reactions:

Reactions with strong acids and oxidising agents.
Development of highly flammable gases/vapours.

10.4 Conditions to avoid:

Avoid all sources of ignition: Heat, sparks, open flames.
Avoid electrostatic discharge.
Avoid extreme temperatures.
Protect from direct sunlight.

10.5 Incompatible materials:

Oxidising agents
Alkali and alkaline earth metals.

10.6 Hazardous decomposition products:

No information available

11. Toxicological Information

11.1 Information on toxicological effects

11.1.1 Substances

Acute toxicity (Ethanol 642 – 99.9%)

Oral: LD50 rat: dose 6200 -17800 mg/kg
Inhalation: LC50 mouse: dose >20 mg/l, 4h (RTECS); symptoms: mild irritation of mucosal membranes, absorption
Dermal: LD50 (rabbit): > 20000 mg/kg (OECD TG 402) literature value
Skin irritation (rabbit): No irritation (OECD 404)
Eye irritation (rabbit) : No irritation (OECD 405)
Sensitisation test (Magnusson and Kligman): negative (IUCLID)
In-vitro genotoxicity: Ames test (Salmonella typhimurium): negative (National Toxicology Program)

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

No information available.

Specific target organ toxicity (single exposure)

The mixture is not classified as target organ toxic with single exposure.

Specific target organ toxicity (repeated exposure)

The mixture is not classified as target organ toxic with repeated exposure.

Risk of aspiration

No classification with regard to aspiration toxicity

Further information:

Systemic effects: Euphoria. After absorption of large quantities: dizziness, intoxication, narcosis, respiratory paralysis

Further information:

Take the normal precautions when handling chemicals.

11.2 Endocrine disrupting properties

Not listed.

11.3 Information on other hazards

There is no additional information.

12. Ecological Information

12.1 Ecotoxicity (Ethanol 642 ─ 99.9%):

Fish toxicity:	LC50 Leuciscus idus 8140 mg/l/ 48 h (IUCLID)
Daphnia toxicity:	EC5 Entosiphon sulcatum: 65 mg/l /72 h (toxic limit concentration) (lit)
	EC50 Daphnia magna: 9268-14221 mg/l /48 h (IUCLID)
Algal toxicity:	IC5 Scendedesmus quadricauda: 5000 mg/l /7 d (toxic limit concentration) (lit)
Bacteria toxicity:	EC5 Pseudom. putida: 6500 mg/l 16 h (toxic limit concentration) (IUCLID)

12.2 Persistence and degradability (Ethanol 642 ─ 99.9%):

Biodegradability: readily biodegradable: >70% (301D)

Biochemical oxygen demand (BOD):	930-1670 mg/g (5d) (lit.)
Chemical oxygen demand (COD):	1700 mg/g (84/44/EEC)
Theoretical oxygen demand (ThOD):	2100 mg/g (lit.)
COD/ThBOD ratio	90 % (lit.)

12.3 Bioaccumulation potential (Ethanol 642 ─ 99.9%):

Partition coefficient; n-Octanol / water
Log Pow: -0.32 (experimental) (lit)
Bioaccumulation is not expected (log Pow<1)

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

A PBT/vPvB assessment is not available and a chemical safety assessment is not required / has not been carried out.

12.6 Other harmful effects:

Additional ecotoxicological information:

Do not allow to enter watercourses, waste water or soil!

12.7 Endocrine disrupting properties

Not listed.

12.8 Other adverse effects

Data are not available.

13. Disposal Considerations

13.1 Waste management process

This product and its container must be disposed of as hazardous waste. Disposal of contents and containers in accordance with local/regional/international regulations.

Information relevant for waste water disposal

Do not allow to enter sewerage system.

13.2 Relevant waste legislation

The assignment of the waste code numbers /waste designations shall be carried out in accordance with EAKV in a sector- and process-specific manner.

13.3 Notes

Waste shall be separated in such a way that it can be treated separately by municipal or national waste facilities. Please observe the relevant national or regional regulations.

13.4 **Further information**

Ink that is no longer usable can be returned for disposal.

14. Transport Information

14.1 UN number or ID number

ADR/RID/ADN	UN 1170
IMDG-Code	UN 1170
ICAO-TI	UN 1170

14.2 UN proper shipping name

ADR/RID/ADN	ETHANOL
IMDG-Code	ETHANOL
ICAO-TI	Ethanol

14.3 Transport hazard class(es)

ADR/RID/ADN	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

ADR/RID/ADN	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk

14.8. Overland transport (ADR/RID)

UN number	UN 1170
UN proper shipping name	ETHANOL, Ethanol solution (ETHYLALKOHOL, Ethylalkohol solution)
Transport hazard classes	3
Packing group	II

Inland waterway transport (ADN)

Not relevant.

Sea transport (IMDG)

UN number	UN 1170
UN proper shipping name	ETHANOL, Ethanol solution (ETHYLALKOHOL, Ethylalkohol solution)
Transport hazard classes	3
Packing group	II

Air transport (ICAO)

UN number	UN 1170
UN proper shipping name	ETHANOL, Ethanol solution (ETHYLALKOHOL, Ethylalkohol solution)
Transport hazard classes	3
Packing group	II

.

The transport regulations are quoted in accordance with international regulations and in the form in which they are applied in Germany. Possible deviations in other countries are not taken into account.

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

Not relevant.

Special precautions for the user:

Warning: Flammable liquids.

15. Regulatory Information

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

15.1.1 EU regulations

Hazardous Incident Ordinance:	96/82/EC	Edition: 2003
	Flammable.	7b
	Quantity 1: 5000 t	Quantity 2: 50000 t
Employment restriction:	Observe employment restrictions in accordance with the Youth Protection Act (94/33/EC).	

Relevant European Union (EU) regulations

Regulation 649/2012/EU on the export and import of dangerous chemicals (PIC).

Not listed.

Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS).

Not listed.

Regulation 850/2004/EC on Persistent Organic Pollutants (POP)
Not listed.
Restrictions according to REACH, Annex VIII
None
List of substances subject to authorisation (REACH, Annex XIV) /SVHC - candidate list
not listed
Directive on industrial emissions (VOCs, 2010/75/EU) Deco-Paint Directive (2004/42/EC)
VOC content: 100 %
Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) - Annex II
Not listed
Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Pollutant Release and Transfer Register (PRTR)
not listed
Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
Not listed.
Regulation 98/2013/EU on the marketing and use of explosives precursors
Not listed
Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors
Not listed
15.1.2. Substance is listed in the following national inventories:

Countr	National Directroies	Substance status
AU	AICS	Ethanol is listed
CA	DSL	Ethanol is listed
CN	IECSC	Ethanol is listed
EU	ECSI	Ethanol is listed
EU	EINECS/ELINCS/NLP	Ethanol is listed
JP	CSCL-ENCS	Ethanol is listed
KR	KECI	Ethanol is listed
MX	INSQ	Ethanol is listed
NZ	NSQ	Ethanol is listed
PH	PICCS	Ethanol is listed
TR	CICR	Ethanol is listed
TW	TCSI	Ethanol is listed
US	TSCA	Ethanol is listed

Legende
AICS Australian Inventory of Chemical Substances
CICR Chemical Inventory and Control Regulation
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS) (Japan)
DSL/NDSL Domestic Substances List (DSL) (Kanada):
ECSI EG-Stoffverzeichnis (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NZIoC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances
REACH Reg. REACH registrierte Stoffe
TCSI Taiwan Chemical Substance Inventory
TSCA Toxic Substance Control Ac (USA)
15.1.2 National regulations (Germany)
Storage class VCI: 3 Flammable liquid substances
BG Chemie data sheet:
M017 Solvents
M050 Handling hazardous materials
Water hazard class
WGK 1 Slightly harmful to water
15.2 Chemical safety assessment:
No chemical safety assessment has been carried out for this product.

16. Other Information

16.1 Changes made (revised safety data sheet)

Notice of changes: Section 1 Section 3 Section 8 Section 9 Section 14 Section 16

16.2 Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
DIN	German Institute for Standardisation
EG	European Community
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
IMDG Code	International Maritime Code for Dangerous Goods
ISO	International Standards Organisation
IUCLID	International Uniform Chemical Information Database
LC	Lethal Concentration
LD	Lethal Dose
log K_{ow}	Partition coefficient between octanol and water
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative, Toxic
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TRGS	Technical Rules for Hazardous Substances
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative
VwVwS	Administrative Regulation on the Classification of Substances Hazardous to Water
WGK	Water Hazard Class

16.3 Most important literature references and data sources

The data for the ingredients was taken from the most recent version of the pre-supplier's safety data sheet.
Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

16.4 Classification of mixtures and evaluation methods used in accordance with Regulation (EC) No. 1272/2008 [CLP]

See section 2.1 (classification).

16.5 Wording of H and EUH phrases (number and full text):

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness.

16.6 Training advice:

Provide appropriate information, instructions and training for users.

16.7 Other information:

The health hazards referred to in this data sheet may occur if larger quantities of the product are handled carelessly or inappropriately and when safety precautions and hygiene measures are not observed. However, as a quantity of several milligrams is used in a process to measure the surface tension and these measurements are not continuous but instead conducted over a period of one or more hours, we can practically exclude any damage to health if the product is handled correctly and the prescribed safety measures are observed (these include good ventilation and appropriate hand protection).

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