MicroChemicals

Safety Data Sheet

according to Regulation (EC) No 1907/2006

TI- 09 XR

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

1.1. Product identifier

TI- 09 XR

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

Use of the substance/mixture

elctronic industry
Intermediate

1.3. Details of the supplier of the safety data sheet

Company name:	MicroChemicals GmbH	
Street:	Nicolaus-Otto-Str. 39	
Place:	D-89079 Ulm	
Telephone:	+49 (0) 731 977343 0	Telefax: +49 (0) 731 977343 29
e-mail:	info@microchemicals.com	
Contact person:	Dr. Christian Koch	
e-mail:	msds@microchemicals.com	
Internet:	www.microchemicals.com	

1.4. Emergency telephone number:

+49 (0) 731 977343 0

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Hazard categories:
Flammable liquid: Flam. Liq. 3
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Dam. 1
Reproductive toxicity: Repr. 1B
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Flammable liquid and vapour.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
May damage the unborn child.

2.2. Label elements

Hazardous components which must be listed on the label

ethyl DL-lactate, ethyl lactate
Imidazol

Signal word: Danger

Pictograms:

Hazard statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

H360D May damage the unborn child.

Precautionary statements

P201 Obtain special instructions before use.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see ... on this label).

Special labelling of certain mixtures

Restricted to professional users.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
97-64-3	ethyl DL-lactate, ethyl lactate			>60 %
	202-598-0	607-129-00-7		
	Flam. Liq. 3, STOT SE 3, Eye Dam. 1; H226 H335 H318			
123-86-4	n-butyl acetate			10 - < 15 %
	204-658-1	607-025-00-1		
	Flam. Liq. 3, STOT SE 3; H226 H336 EUH066			
110726-28-8	4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol			1 - < 5 %
	425-600-3	604-071-00-4		
	Aquatic Chronic 4; H413			
288-32-4	Imidazol			1 - < 5 %
	206-019-2			
	Repr. 1B, Acute Tox. 4, Skin Corr. 1C; H360D H302 H314			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated, saturated clothing immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Self-protection of the first aider

After inhalation

Provide fresh air. Medical treatment necessary. Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration. Call a physician immediately.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Call a physician immediately. Let water be drunken in little sips (dilution effect).

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), alcohol resistant foam, Extinguishing powder.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air. Carbon monoxide. Carbon dioxide Nitrogen oxides (NOx). Sulfur oxides. In case of fire and/or explosion do not breathe fumes.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Collect in closed and suitable containers for disposal. Prevent spread over a wide area (e.g. by containment or oil barriers).

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal . Treat the recovered material as prescribed in the section on waste disposal. Clean contaminated objects and areas thoroughly observing environmental regulations. Never return spills in original containers for re-use. Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation as well as local exhaustion at critical locations.

Advice on protection against fire and explosion

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect against: Light

Advice on storage compatibility

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions

Recommended storage temperature 5 - 15°C
Maximum storage period (time): < 1 year

7.3. Specific end use(s)

elctronic industry
Intermediate

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
123-86-4	Butyl acetate	150	724		TWA (8 h)	WEL
		200	966		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
123-86-4	n-butyl acetate			
Worker DNEL, acute		inhalation		960 mg/m³
Worker DNEL, long-term		inhalation		480 mg/m³
Consumer DNEL, acute		inhalation		859,7 mg/m³
Consumer DNEL, long-term		inhalation		102,34 mg/m³
288-32-4	Imidazol			
Worker DNEL, long-term		inhalation	systemic	10,6 mg/m³
Worker DNEL, long-term		dermal	systemic	1,5 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
123-86-4	n-butyl acetate
Freshwater	0,18 mg/l
Marine water	0,018 mg/l
Freshwater sediment	0,981 mg/kg
Marine sediment	0,0981 mg/kg
Soil	0,0903 mg/kg
288-32-4	Imidazol
Freshwater	0,13 mg/l
Marine water	0,013 mg/l
Freshwater sediment	0,336 mg/kg
Marine sediment	0,0336 mg/kg
Soil	0,0425 mg/kg
Micro-organisms in sewage treatment plants (STP)	10 mg/l

Additional advice on limit values

Y: A risk of reproductive effects needs not to be feared if the occupational exposure limit value (AGW) and the biological limit value (BGW) is kept

8.2. Exposure controls




Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary . When using do not eat or drink. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin and eyes.

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Breakthrough time (maximum wearing time): >10min
Thickness of the glove material: > 0,4mm
By short-term hand contact: NBR (Nitrile rubber)

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Respiratory protection necessary at: insufficient exhaust, prolonged exposure

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	yellow red
Odour:	characteristic (ester)

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point:	not determined	
Initial boiling point and boiling range:	155 °C	
Flash point:	49 °C	
Flammability		
Solid:	not applicable	
Gas:	not applicable	
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Ignition temperature:	not determined	
Auto-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not determined	

Oxidizing properties

Not oxidizing.

Vapour pressure: (at 20 °C)	5 hPa	
Density (at 20 °C):	1 g/cm³	
Water solubility:	insoluble	

Solubility in other solvents

not determined

Partition coefficient:	not determined	
Viscosity / dynamic: (at 20 °C)	5 mPa·s	
Vapour density:	not determined	
Evaporation rate:	not determined	

9.2. Other information

Solid content:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable, Ignition hazard.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions. Incompatible materials: Oxidising substances

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

Oxidising agent, Strong acid, Base

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

The product has not been tested.

Acute toxicity

The product has not been tested.

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
123-86-4	n-butyl acetate				
	oral	LD50	>10000 mg/kg	Scenedesmus subspicatus	
	dermal	LD50	>17600 mg/kg	Rabbit	GESTIS
	inhalative (4 h) vapour	LC50	21,1 mg/l	Rat	
110726-28-8	4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol				
	oral	LD50	>5000 mg/kg	Rat	
288-32-4	Imidazol				
	oral	LD50	970 mg/kg	Rat	IUCLID

Sensitising effects

Respiratory or skin sensitisation
4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol
Species:Guinea pig :
Regulation (EC) No. 440/2008, Annex, B.6 (Bühler test) : negative.

Carcinogenic/mutagenic/toxic effects for reproduction

In vitro mutagenicity/genotoxicity
4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol
OECD 471 (Ames test): negative.

Additional information on tests

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] | [d]	Species	Source
123-86-4	n-butyl acetate					
	Acute fish toxicity	LC50	18 mg/l	96 h	Pimephales promelas (fathead minnow)	
	Acute algae toxicity	ErC50	675 mg/l	72 h	Scenedesmus subspicatus	
	Acute crustacea toxicity	EC50	44 mg/l	48 h	Ceriodaphnia spec	
	Acute bacteria toxicity	(356 mg/l)			Activated sludge	
110726-28-8	4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol					
	Acute fish toxicity	LC50	>1000 mg/l	96 h	Oryzias latipes (Ricefish)	
288-32-4	Imidazol					
	Acute fish toxicity	LC50	280 mg/l	96 h	Leuciscus idus (golden orfe)	DIN 37 412 T 15
	Acute algae toxicity	ErC50	133 mg/l	72 h	Scenedesmus quadricauda	IUCLID
	Acute crustacea toxicity	EC50	342 mg/l	48 h	Daphnia magna (Big water flea) Pseudomonas putida	OECD- 202
	Acute bacteria toxicity	(1200 mg/l)		3 h	Pseudomonas putida	IUCLID

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
110726-28-8	4,4'-(1-{4-[1-(4-hydroxyphenyl)-1-methylethyl]phenyl}ethylidene)diphenol			
		<10%	28	
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
123-86-4	n-butyl acetate	1,78
288-32-4	Imidazol	-0,02

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment. Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (ethyl DL-lactate, ethyl lactate, n-butyl acetate)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Classification code:	F1
Special Provisions:	274 601 640E
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (ethyl DL-lactate, ethyl lactate, n-butyl acetate)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Classification code:	F1
Special Provisions:	274 601 640E
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number:	UN 1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (ethyl DL-lactate, ethyl lactate, n-butyl acetate)
14.3. Transport hazard class(es):	3
14.4. Packing group:	III

Hazard label: 3

Special Provisions: 223, 274, 955
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-E, S-E

Air transport (ICAO)

14.1. UN number: UN 1993

14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (ethyl DL-lactate, ethyl lactate, n-butyl acetate)

14.3. Transport hazard class(es): 3

14.4. Packing group: III

Hazard label: 3

Special Provisions: A3
Limited quantity Passenger: 10 L
Passenger LQ: Y344
Excepted quantity: E1

IATA-packing instructions - Passenger: 355
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 366
IATA-max. quantity - Cargo: 220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.
Water contaminating class (D): 1 - slightly water contaminating

Additional information

REACH ANNEX XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES:
Imidazol, n-butyl acetate

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

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 Harmonized 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
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Relevant H- and EUH-phrases (Number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H360D	May damage the unborn child.
H413	May cause long lasting harmful effects to aquatic life.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)