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

1.1 Product identifier

Trade name: Remover/Thinner X AR 300-74/1
REACH registration No.: 01-2119489370-35-XXXX

CAS-Number: 100-41-4
EC-number: 202-849-4
EU index number: 601-023-00-4

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

General use: Intermediate for electronic industry
Reserved for industrial and professional use.

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
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

Department responsible for information:
Frau Dr. Zimmermann, Email: produktion@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.
STOT RE 2; H373 May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1; H304 May be fatal if swallowed and enters airways.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H225	Highly flammable liquid and vapour.
	H304	May be fatal if swallowed and enters airways.
	H332	Harmful if inhaled.
	H373	May cause damage to organs through prolonged or repeated exposure.
Precautionary Statements:		
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P261	Avoid breathing vapours/spray.
	P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P331	Do NOT induce vomiting.
	P370+P378	In case of fire: Use dry powder, foam or carbon dioxide for extinction.
	P403+P235	Store in a well-ventilated place. Keep cool.

2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment:

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

SECTION 3: Composition / information on ingredients

3.1 Substances

Chemical characterisation:	C8 H10 = C6H5-C2H5 Ethylbenzene =<100%
CAS-Number:	100-41-4
EC-number:	202-849-4
EU index number:	601-023-00-4
RTECS-Number:	DA0700000
Customs tariff number:	2902 60 90

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:	If medical advice is needed, have product container or label at hand. First aider: Pay attention to self-protection!
In case of inhalation:	Move victim to fresh air. In case of irregular breathing or respiratory arrest provide artificial respiration. If victim is at risk of losing consciousness, position and transport on their side. Seek medical attention.
Following skin contact:	After contact with skin, wash immediately with soap and plenty of water. Take off immediately all contaminated clothing and wash it before reuse. 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. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

After swallowing: Rinse mouth and drink large quantities of water.
Do not induce vomiting. Danger of aspiration! Immediately get medical attention.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. May be fatal if swallowed and enters airways. Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Due to risk of aspiration gastric lavage may only be applied under endotracheal intubation.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Extinguishing powder, foam, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

Full water jet.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. On heating or in case of fire toxic gases may form. With air, vapours form potentially explosive mixtures, which are heavier than air. Vapours may proceed on the ground over great distances and cause fire and backflashes. Furthermore, there may develop: carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Hazchem-Code: 3YE

Heating will lead to pressure increase: Danger of bursting and explosion. Use fine water spray to cool endangered containers.
Keep containers cool with water spray.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Provide adequate ventilation. Wear appropriate protective equipment. Avoid contact with the substance. Keep unprotected people away. Take off immediately all contaminated clothing and wash it before reuse. Cordon off downwind area at risk and warn inhabitants. Do not breathe vapour/aerosol. If possible, eliminate leakage.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!
In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).
Never return spills in original containers for re-use.

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

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. Avoid contact with skin, eyes, and clothing. Do not breathe vapour/aerosol. Avoid generation of vapours/aerosols. Wear appropriate protective equipment.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off immediately all contaminated clothing and wash it before reuse. Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation. Work place should be equipped with a shower and an eye rinsing apparatus.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Use explosion-proof electrical/ventilating/lighting equipment. Do not weld. In partially filled containers explosive mixtures may form.

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 only in original container. Protect from heat and direct sunlight. Explosion protection required. Store containers in upright position.

Unsuitable materials: May attack plastics.
Steel, stainless steel and aluminium are stable container materials.
Storage temperature: 10 - 22 °C.

Hints on joint storage: Do not store together with strong oxidizing agents.
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

Type	Limit value
Europe: IOELV: STEL	884 mg/m³; 200 ppm (may be absorbed through the skin)
Europe: IOELV: TWA	442 mg/m³; 100 ppm (may be absorbed through the skin)
Great Britain: WEL-STEL	552 mg/m³; 125 ppm (may be absorbed through the skin)
Great Britain: WEL-TWA	441 mg/m³; 100 ppm (may be absorbed through the skin)
Ireland: 15 minutes	884 mg/m³; 200 ppm (may be absorbed through the skin)
Ireland: 8 hours	442 mg/m³; 100 ppm (may be absorbed through the skin)

DNEL/DMEL: DNEL long-term, systemic, workers, inhalative: 17.5 ppm (77 mg/m³).
DNEL short-term, local, workers, inhalative: 67 ppm (293 mg/m³)
DNEL long-term, systemic, workers, dermal: 180 mg/kg bw/d

PNEC: PNEC water (freshwater): 0.1 mg/L.
PNEC water (marine water): 0.01 mg/L.
PNEC water (intermittent release): 0.1 mg/L.
PNEC sediment (freshwater): 13.7 mg/kg dwt.
PNEC sediment (marine water): 0.0614 mg/kg dwt.
PNEC soil: 2.68 mg/kg dwt.
PNEC sewage treatment plant: 9.6 mg/L.

8.2 Exposure controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Explosion protection required.

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. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

Hand protection: Protective gloves according to EN 374.
During full contact:
Glove material: Fluororubber (Viton) - Layer thickness: 0.7 mm.
Breakthrough time: > 480 min.
During splash contact:
Glove material: Nitrile rubber - Layer thickness: 0.4 mm.
Breakthrough time: > 10 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Flame retardant, antistatic and chemical resistant protective clothing.

General protection and hygiene measures:

Do not breathe vapour/aerosol. Take off immediately all contaminated clothing and wash it before reuse. Do not get in eyes, on skin, or on clothing. Keep away from sources of ignition. When using do not eat, drink or smoke.
Wash hands before breaks and after work.
Work place should be equipped with a shower and an eye rinsing apparatus.

Environmental exposure controls

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Physical state at 20 °C and 101.3 kPa: liquid Colour: colourless, clear
Odour:	characteristic aromatic
Odour threshold:	20 ppm
pH value:	No data available
Melting point/freezing point:	-95 °C
Initial boiling point and boiling range:	136 °C
Flash point/flash point range:	15 °C (c.c.)
Evaporation rate:	No data available
Flammability:	Highly flammable liquid and vapour.
Explosion limits:	LEL (Lower Explosion Limit): 1.00 Vol-% UEL (Upper Explosive Limit): 7.80 Vol-%
Vapour pressure:	at 20 °C: 9.50 hPa
Vapour density:	at 20 °C: 3.66 (Air = 1)
Density:	at 20 °C: 0.87 g/mL
Solubility:	soluble in organic solvents, e.g. methanol, n-Hexane, ethanol, benzene, chloroform, diethyl ether
Water solubility:	at 25 °C: 0.2 g/L
Partition coefficient: n-octanol/water:	at 25 °C: 3.6 log P(o/w) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, dynamic:	at 20 °C: 0.680 mPa*s
Viscosity, kinematic:	at 20 °C: 0.773 mm²/s
Explosive properties:	Product is not explosive. Vapours can form explosive mixtures with air.
Oxidizing characteristics:	Product has no oxidizing effect.

9.2 Other information

Ignition temperature:	430 °C
Molecular weight	106.165 g/mol
Additional information:	Surface tension: 71.2 N/m (23 °C)

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Heating will lead to pressure increase: Danger of bursting and explosion.
Reacts violently with strong oxidizing agents.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from direct sunlight.

10.5 Incompatible materials

Strong oxidizing agents, rubber, various plastics.

10.6 Hazardous decomposition products

No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LD50 Rat, oral:	3500 mg/kg
LD50 Rabbit, dermal:	15400 mg/kg
LC50 Rat, inhalative (vapour):	17.2 mg/L/4h

Toxicological effects:

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

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

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Based on available data, the classification criteria are not met. human experience negative.

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.
Ames test Salmonella typhimurium negative (OECD 471).
Chromosomal aberrations mammalian cells in-vivo negative (OECD 474).
gene-mutations mammalian cells in-vitro positive and negative (OECD 476).
Sister chromatid exchange mammalian cells negative (OECD 479).

Carcinogenicity: Based on available data, the classification criteria are not met.
Rat-longterm animal experiment (NTP):
750 ppm group: increased tumor incidences.
250 ppm group: No visible effects.
Classified according to IARC: 2B (possible for humans).

Reproductive toxicity: Based on available data, the classification criteria are not met.

Effects on or via lactation: Lack of data.

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

Specific target organ toxicity (repeated exposure): STOT RE 2; H373 = May cause damage to organs through prolonged or repeated exposure.
Organs affected: auditory system

Aspiration hazard: Asp. Tox. 1; H304 = May be fatal if swallowed and enters airways.

Symptoms

High concentrations of vapours irritate the eyes and mucous membranes.
Systemic effects: CNS disorders with fatigue and headache
In case of inhalation: Harmful.
irritation to respiratory tract. Risk of resorption.
Mucous membrane irritation, headache, dizziness, fatigue, nausea, unconsciousness.
After absorption of large quantities: CNS disorders, narcosis.
In case of ingestion:
When swallowed and vomited immediately, aspiration into the lungs may occur resulting in chemical pneumonia or suffocation.
Harmful: may cause lung damage if swallowed.
Aspiration of this product into the lungs during vomiting, may cause serious injury or death.
After contact with skin:
Danger of cutaneous absorption.
Defatting properties may induce eczema.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Algae toxicity:
EC50 Pseudokirchneriella subcapitata (green algae): 8.8 mg/L/96h
NOEC Pseudokirchneriella subcapitata (green algae): 3.4 mg/L/96h (calculated)
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 1.8 - 2.4 mg/L/48h (US-EPA).
NOEC Ceriodaphnia dubia: 1.0 mg/L/7d (US-EPA).
Fish toxicity:
LC50 Oncorhynchus mykiss: 4.2 mg/L/96h (OECD 203).
LC50 Menidia menidia: 5.1 mg/L/96h (US-EPA).
NOEC Menidia menidia: 3.3 mg/L/96h (US-EPA).

Acute toxicity marine invertebrates:
LC50 Mysidopsis bahia: 2.6 mg/L/96h (US-EPA).

Further details:

Terrestrial animals soil:
LC50 Eisenia foetida: 0,047 mg/cm³/48h (OECD 207).

12.2 Persistence and degradability

Further details:

Abiotic degradation:
Atmospheric compartment:
Indirect photodegradation by reaction with OH radicals.
Half-life time approx. 2.3 d.

Biodegradation:
70 - 80 %/ 28 d (ISO 14593). Readily biodegradable.
81 - 100 %/14 d (OECD 302 C). Inherently biodegradable.

Does not dissolve in water. Floats on water surface.

Oxygen demand:

BOD: 1,78 g/g

ThOD: 3,17 mg/L

Effects in sewage plants:

EC50 Nitrosomonas sp.: 96 mg/L/24h.
EC50 Bacteria in activated sludge: 152 mg/L/30 min (OECD 209).

12.3 Bioaccumulative potential

Bioaccumulative potential low.
Secondary poisoning via the food chain is unlikely to occur.

Bioconcentration factor (BCF):

91 (calculated)

12.4 Mobility in soil

Environmental distribution:
Adsorption/Desorption soil:
Adsorption coefficient (Koc): 518 at 20 °C.

Volatility rate:
H = 854.2 Pa * m³/mol at 20 °C.
The product is highly volatile.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

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: 07 01 04* = organic solvents, halogen-free
* = Evidence for disposal must be provided.

Recommendation: Dispose of waste according to applicable legislation.
Do not empty into drains.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.
Handle empty containers with care. Incineration may cause explosion.

SECTION 14: Transport information

14.1 UN number

ADR/RID, IMDG, IATA-DGR:
UN 1175

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:
UN 1175, ETHYLBENZENE

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3

14.4 Packing group

ADR/RID, IMDG, IATA-DGR:
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 UN 1175
Hazard label:	3
Limited quantities:	1 L
EQ:	E2
Contaminated packaging - Instructions:	P001 IBC02 R001
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T4
Portable tanks - Special provisions:	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E

Sea transport (IMDG)

EmS:	F-E, S-D
Special provisions:	-
Limited quantities:	1 L
Excepted quantities:	E2
Contaminated packaging - Instructions:	P001
Contaminated packaging - Provisions:	-
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T4
Tank instructions - Provisions:	TP1
Stowage and handling:	Category B.
Properties and observations:	Colourless liquid with an an aromatic odour. Flashpoint: 22°C c.c. Explosive limits: 1% to 6.7%. Immiscible with water.
Segregation group:	none

Air transport (IATA)

Hazard label:	Flamm. liquid
Excepted Quantity Code:	E2
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Emergency Response Guide-Code (ERG):	3L

14.7 Transport in bulk according to Annex II of Marpol 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

No data available

National regulations - EC member states

Volatile organic compounds (VOC):

100 % by weight = 870 g/L

Labelling of packaging with <= 125mL content

Signal word: **Danger**

Hazard statements:	H304	May be fatal if swallowed and enters airways.
Precautionary Statements:		
	P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P331	Do NOT induce vomiting.

Further regulations, limitations and legal requirements:

Use restriction according to REACH annex XVII, no.: 3
Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: annex I, part 1, P5c.

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

SECTION 16: Other information

Further information

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL: Occupational Exposure Limit Value
AS/NZS: Australian Standards/New Zealand Standards
BOD: Biochemical oxygen demand
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
CNS: Central Nervous System
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC50: Effective Concentration 50%
EC: European Community
EN: European Standard
EU: European Union
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC: No Observed Effect Concentration
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
STOT RE: Specific target organ toxicity - repeated exposure
ThOD: Theoretical Oxygen Demand
ThOD: Theoretical Oxygen Demand
TLV: Threshold Limit Value
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit
CNS: Central Nervous System

Reason of change: Changes in section 1.3: Department responsible for information
Date of first version: 19/8/2010

Department issuing data sheet

Contact person: see section 1: Department responsible for information

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.