

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/12/2019

Reviewed on 02/11/2019

1 Identification

- **Product identifier**
- **Trade name:** Applied Technologies A-Tech 1300 "A"
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Applied Technologies
4350 Wade Mill Rd.
Fairfield OH. 45014
- **Information department:** Product Safety Department
- **Emergency telephone number:** Chemtrec 1-800-424-9300

Phone: 1 (513) 939-3766
www.appliedtechnologies.com

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
- Muta. 1B H340 May cause genetic defects.*
- Carc. 1A H350 May cause cancer.*
- STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.*
- Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.*



GHS07

- Acute Tox. 4 H312 Harmful in contact with skin.*
- Acute Tox. 4 H332 Harmful if inhaled.*
- Skin Irrit. 2 H315 Causes skin irritation.*
- Eye Irrit. 2A H319 Causes serious eye irritation.*
- Skin Sens. 1 H317 May cause an allergic skin reaction.*
- STOT SE 3 H335 May cause respiratory irritation.*
- Flam. Liq. 4 H227 Combustible liquid.*

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
4,4'-methylenediphenyl diisocyanate
benzene
diphenylmethanediisocyanate, isomeres and homologues
methylenediphenyl diisocyanate

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· **Hazard statements**

Combustible liquid.
 Harmful in contact with skin or if inhaled.
 Causes skin irritation.
 Causes serious eye irritation.
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 May cause an allergic skin reaction.
 May cause genetic defects.
 May cause cancer.
 May cause respiratory irritation.
 Causes damage to organs through prolonged or repeated exposure.
 May be fatal if swallowed and enters airways.

· **Precautionary statements**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from flames and hot surfaces. – No smoking.
 Do not breathe dust/fume/gas/mist/vapors/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 [In case of inadequate ventilation] wear respiratory protection.
 If swallowed: Immediately call a poison center/doctor.
 Specific treatment (see on this label).
 Do NOT induce vomiting.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Call a poison center/doctor if you feel unwell.
 Get medical advice/attention if you feel unwell.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 If experiencing respiratory symptoms: Call a poison center/doctor.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



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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:**

101-68-8	4,4'-methylenediphenyl diisocyanate	20–65%
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	10–25%
64742-94-5	Solvent naphtha (petroleum), heavy arom.	10–25%
91-20-3	naphthalene	0.1–2.5%
26447-40-5	methylenediphenyl diisocyanate	1–2.5%
71-43-2	benzene	0.1–2.5%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **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.
- **Information for 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:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:** 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.

- **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.

- **Protective Action Criteria for Chemicals**

- **PAC-1:**

101-68-8	4,4'-methylenediphenyl diisocyanate	0.45 mg/m ³
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	0.15 mg/m ³
91-20-3	naphthalene	15 ppm
26447-40-5	methylenediphenyl diisocyanate	29 mg/m ³
71-43-2	benzene	52 ppm

- **PAC-2:**

101-68-8	4,4'-methylenediphenyl diisocyanate	5 mg/m ³
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	3.6 mg/m ³
91-20-3	naphthalene	83 ppm
26447-40-5	methylenediphenyl diisocyanate	40 mg/m ³
71-43-2	benzene	800 ppm

- **PAC-3:**

101-68-8	4,4'-methylenediphenyl diisocyanate	55 mg/m ³
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	22 mg/m ³
91-20-3	naphthalene	500 ppm
26447-40-5	methylenediphenyl diisocyanate	240 mg/m ³
71-43-2	benzene	4000* ppm

7 Handling and storage

- **Handling:**

- **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.

Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

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- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

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

· Components with limit values that require monitoring at the workplace:

101-68-8 4,4'-methylenediphenyl diisocyanate

PEL	Ceiling limit value: 0.2 mg/m ³ , 0.02 ppm
REL	Long-term value: 0.05 mg/m ³ , 0.005 ppm Ceiling limit value: 0.2* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.051 mg/m ³ , 0.005 ppm

91-20-3 naphthalene

PEL	Long-term value: 50 mg/m ³ , 10 ppm
REL	Short-term value: 75 mg/m ³ , 15 ppm Long-term value: 50 mg/m ³ , 10 ppm
TLV	Long-term value: 52 mg/m ³ , 10 ppm Skin; BEI

71-43-2 benzene

PEL	Short-term value: 15* mg/m ³ , 5* ppm Long-term value: 3* mg/m ³ , 1* ppm *table Z-2 for exclusions in 29CFR1910.1028(d)
REL	Short-term value: 1 ppm Long-term value: 0.1 ppm See Pocket Guide App. A
TLV	Short-term value: 8 mg/m ³ , 2.5 ppm Long-term value: 1.6 mg/m ³ , 0.5 ppm Skin; BEI

· Ingredients with biological limit values:

71-43-2 benzene

BEI	25 µg/g creatinine Medium: urine Time: end of shift Parameter: S-Phenylmercapturic acid (background)
	500 µg/g creatinine Medium: urine Time: end of shift Parameter: t,t-Muconic acid (background)

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

- **Exposure controls**
- **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.

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Store protective clothing separately.

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:**



Protective gloves

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

· **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

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Brown
Odor:	of hydrocarbons
Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	200 °C (392 °F)

· **Flash point:** 61 °C (141.8 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 400 °C (752 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Not determined.

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· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	0 hPa (0 mm Hg)
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.1–2.5 %
VOC content:	0.1–2.5 %
	25.0 g/l / 0.21 lb/gal
· Other information	No further relevant information available.

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

ATE (Acute Toxicity Estimate)

Oral	LD50	2,844–10,735 mg/kg
Dermal	LD50	1,902–47,544 mg/kg
Inhalative	LC50/4 h	11.9–35.5 mg/l

101-68-8 4,4'-methylenediphenyl diisocyanate

Oral	LD50	2,200 mg/kg (mouse)
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91-20-3 naphthalene

Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rat)

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71-43-2 benzene

Oral	LD50	4,894 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
Inhalative	LC50/4 h	9,980 mg/l (mouse)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:**

- Sensitization possible through inhalation.

- Sensitization possible through skin contact.

- **Additional toxicological information:**

- The product shows the following dangers according to internally approved calculation methods for preparations:

- Harmful

- Irritant

- The product can cause inheritable damage.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

101-68-8	4,4'-methylenediphenyl diisocyanate	3
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	3
91-20-3	naphthalene	2B
71-43-2	benzene	1

- **NTP (National Toxicology Program)**

91-20-3	naphthalene	R
71-43-2	benzene	K

- **OSHA-Ca (Occupational Safety & Health Administration)**

71-43-2	benzene
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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

- Water hazard class 3 (Self-assessment): extremely hazardous for water

- Do not allow product to reach ground water, water course or sewage system, even in small quantities.

- Danger to drinking water if even extremely small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

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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.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT · IMDG, IATA 	<p style="margin-left: 20px;">not regulated</p> <p style="margin-left: 20px;">UN3082</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	<p style="margin-left: 20px;">not regulated</p> <p style="margin-left: 20px;">ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., MARINE POLLUTANT</p> <p style="margin-left: 20px;">ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT · Class 	<p style="margin-left: 20px;">not regulated</p>
<ul style="list-style-type: none"> · IMDG, IATA <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> · Class · Label <p style="margin-left: 20px;">9 Miscellaneous dangerous substances and articles</p> <p style="margin-left: 20px;">9</p>
<ul style="list-style-type: none"> · Packing group · DOT · IMDG, IATA 	<p style="margin-left: 20px;">not regulated</p> <p style="margin-left: 20px;">III</p>
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: · Special marking (IATA): 	<p style="margin-left: 20px;">Symbol (fish and tree)</p> <p style="margin-left: 20px;">Symbol (fish and tree)</p>
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category 	<p style="margin-left: 20px;">Warning: Miscellaneous dangerous substances and articles</p> <p style="margin-left: 20px;">90</p> <p style="margin-left: 20px;">F-A,S-F</p> <p style="margin-left: 20px;">A</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p style="margin-left: 20px;">Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) 	<p style="margin-left: 20px;">5L</p>

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· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III

15 Regulatory information

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

· **Sara**

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

None of the ingredients is listed.

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

101-68-8	4,4'-methylenediphenyl diisocyanate
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues
91-20-3	naphthalene
71-43-2	benzene

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

91-20-3	naphthalene
71-43-2	benzene

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

71-43-2	benzene
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· **Chemicals known to cause developmental toxicity:**

71-43-2	benzene
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· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

101-68-8	4,4'-methylenediphenyl diisocyanate	D, CBD
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	CBD
91-20-3	naphthalene	C, CBD
71-43-2	benzene	A, K/L

· **TLV (Threshold Limit Value established by ACGIH)**

91-20-3	naphthalene	A4
71-43-2	benzene	A1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

71-43-2	benzene
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· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**



GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

4,4'-methylenediphenyl diisocyanate
benzene
diphenylmethanediisocyanate, isomers and homologues
methylenediphenyl diisocyanate

· **Hazard statements**

Combustible liquid.
Harmful in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.
Causes damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

· **Precautionary statements**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from flames and hot surfaces. – No smoking.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory protection.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Do NOT induce vomiting.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If experiencing respiratory symptoms: Call a poison center/doctor.
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO₂, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.

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Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.

Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 02/11/2019 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

HMIS: 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

Flam. Liq. 4: Flammable liquids – Category 4

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1A: Carcinogenicity – Category 1A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Asp. Tox. 1: Aspiration hazard – Category 1

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