

# Safety Data Sheet

## ACC 4410



Safety Data Sheet dated 9/5/2012, version 2  
In compliance with Regulation (EC) 453/2010

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Mixture identification:  
Trade name: ACC 4410  
Product type: solvent

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

Recommended use:  
Washing and cleaning products (including solvent based products)  
Uses advised against:  
Not available

#### 1.3 Details of the supplier of the safety data sheet

Supplier:  
AirChem Consumables, LOB 10, Office # 10F14, JAFZA, Dubai, UAE  
Tel: +971-4-881 8084, Fax: +971-4-881 6022, Email: [airacc@acc.ae](mailto:airacc@acc.ae)  
Competent person responsible for the safety data sheet:

[airacc@acc.ae](mailto:airacc@acc.ae)

#### 1.4. Emergency telephone number

AirChem Consumables, Tel: +971-4-881 8084, Fax: +971-4-881 6022, Email: [airacc@acc.ae](mailto:airacc@acc.ae)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols:

F Highly flammable  
Xn Harmful  
Xi Irritant  
N Dangerous for the environment

R Phrases:

R11 Highly flammable.  
R36/38 Irritating to eyes and skin.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R63 Possible risk of harm to the unborn child  
R65 Harmful: may cause lung damage if swallowed.  
R66 Repeated exposure may cause skin dryness or cracking.  
R67 Vapours may cause drowsiness and dizziness.

Adverse physicochemical, human health and environmental effects:

The product easily catches fire if it is exposed to an ignition source.  
If brought into contact with the eyes, the product causes irritation that may last for over 24 hours, and if brought into contact with the skin it causes significant inflammation with erythema, scabs, and oedema.  
This product is harmful: serious harm (functional disorders or significant morphological changes that are toxicology-related) may be caused by repeated or prolonged exposure to the product by inhalation.  
This product is harmful - it is suspected that it can be injurious to the foetus.  
The product may cause lung damage if swallowed.  
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### 2.2. Label elements

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:



Xn

F

N

Symbols:

Xn Harmful  
F Highly flammable  
N Dangerous for the environment

R Phrases:

R11 Highly flammable.  
R36/38 Irritating to eyes and skin.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R63 Possible risk of harm to the unborn child  
R65 Harmful: may cause lung damage if swallowed.  
R66 Repeated exposure may cause skin dryness or cracking.  
R67 Vapours may cause drowsiness and dizziness.

S Phrases:

S13 Keep away from food, drink and animal feedingstuffs.

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S16 Keep away from sources of ignition - No smoking.  
S29 Do not empty into drains.  
S36/37 Wear suitable protective clothing and gloves.  
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.  
S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Contents:

toluene  
heptane

### 2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:

20% - 40% toluene

REACH No.: 01-2119471310-51-XXXX, Index number: 601-021-00-3, CAS: 108-88-3, EC: 203-625-9  
F,Xn,Xi; R11-38-48/20-63-65-67



2.6/2 Flam. Liq. 2 H225



3.7/2 Repr. 2 H361



3.10/1 Asp. Tox. 1 H304



3.9/2 STOT RE 2 H373



3.2/2 Skin Irrit. 2 H315



3.8/3 STOT SE 3 H336

20% - 40% Ethyl acetate

REACH No.: 01-2119475103-46-XXXX, Index number: 607-022-00-5, CAS: 141-78-6, EC: 205-500-4  
F,Xi; R11-36-66-67



2.6/2 Flam. Liq. 2 H225



3.3/2 Eye Irrit. 2 H319



3.8/3 STOT SE 3 H336

20% - 30% heptane

REACH No.: 01-2119457603-38-XXXX, Index number: 601-008-00-2, CAS: 142-82-5, EC: 205-563-8  
F,Xn,Xi,N; R11-38-50/53-65-67



2.6/2 Flam. Liq. 2 H225



3.10/1 Asp. Tox. 1 H304



3.2/2 Skin Irrit. 2 H315



3.8/3 STOT SE 3 H336



4.1/A1 Aquatic Acute 1 H400



4.1/C1 Aquatic Chronic 1 H410

10% - 20% acetone

REACH No.: 01-2119471330-49-XXXX, Index number: 606-001-00-8, CAS: 67-64-1, EC: 200-662-2  
F,Xi; R11-36-66-67



2.6/2 Flam. Liq. 2 H225



3.3/2 Eye Irrit. 2 H319



3.8/3 STOT SE 3 H336

10% - 20% Propan-2-ol

REACH No.: 01-2119457558-25-XXXX, Index number: 603-117-00-0, CAS: 67-63-0, EC: 200-661-7

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F,Xi; R11-36-67  
 2.6/2 Flam. Liq. 2 H225


 3.3/2 Eye Irrit. 2 H319

 3.8/3 STOT SE 3 H336

1% - 5% butanone; ethyl methyl ketone

REACH No.: 01-2119457290-43-XXXX, Index number: 606-002-00-3, CAS: 78-93-3, EC: 201-159-0

F,Xi; R11-36-66-67

 2.6/2 Flam. Liq. 2 H225

 3.3/2 Eye Irrit. 2 H319

 3.8/3 STOT SE 3 H336

For the complete text of the hazard and risk phrases refer to paragraph 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.

Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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

None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

None

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

None in particular.

#### 5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

#### 5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

#### 6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

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- 6.3. Methods and material for containment and cleaning up  
Wash with plenty of water.
- 6.4. Reference to other sections  
See also section 8 and 13

### SECTION 7: Handling and storage

- 7.1. Precautions for safe handling  
Avoid contact with skin and eyes, inhalation of vapours and mists.  
Use localized ventilation system.  
Don't use empty container before they have been cleaned.  
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.  
Contaminated clothing should be changed before entering eating areas.  
Do not eat or drink while working.  
See also section 8 for recommended protective equipment.
- 7.2. Conditions for safe storage, including any incompatibilities  
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.  
Keep away from food, drink and feed.  
Incompatible materials:  
None in particular.  
Instructions as regards storage premises:  
Cool and adequately ventilated.
- 7.3. Specific end use(s)  
For more information see Technical data bulletin  
None in particular

### SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters  
Contained substances
- toluene - CAS: 108-88-3  
OEL Type: ACGIH, 20 ppm - Behaviour: Binding - Notes: A4, IBE  
OEL Type: EU - LTE: 192 mg/m<sup>3</sup>, 50 ppm - STE: 384 mg/m<sup>3</sup>, 100 ppm - Behaviour: Binding - Notes: Skin  
VLE 8h - VLE short: None
  - Ethyl acetate - CAS: 141-78-6  
OEL Type: ACGIH - LTE: 1441.31 mg/m<sup>3</sup>, 400 ppm - Behaviour: Binding - Notes: Respiratory and eye irritation  
VLE 8h - VLE short: None
  - heptane - CAS: 142-82-5  
OEL Type: ACGIH - LTE: 1639.26 mg/m<sup>3</sup>, 400 ppm - STE: 2049.08 mg/m<sup>3</sup>, 500 ppm - Behaviour: Binding  
OEL Type: EU - LTE: 2085 mg/m<sup>3</sup>, 500 ppm - Behaviour: Binding  
VLE 8h - VLE short: None
  - acetone - CAS: 67-64-1  
OEL Type: ACGIH, 500 ppm, 750 ppm - Behaviour: Binding - Notes: A4, IBE. Respiratory and eye irritation, central nervous system, blood.  
OEL Type: EU - LTE: 1210 mg/m<sup>3</sup>, 500 ppm  
VLE 8h - VLE short: None
  - Propan-2-ol - CAS: 67-63-0  
OEL Type: ACGIH - LTE: 491.53 mg/m<sup>3</sup>, 200 ppm - STE: 983.07 mg/m<sup>3</sup>, 400 ppm - Behaviour: Binding - Notes: A4  
OEL Type: EU - LTE: 375 mg/m<sup>3</sup>, 100 ppm - STE: 568 mg/m<sup>3</sup>, 150 ppm - Behaviour: Binding - Notes: 08/06/2000  
VLE 8h - VLE short: None
  - butanone; ethyl methyl ketone - CAS: 78-93-3  
OEL Type: ACGIH, 200 ppm, 300 ppm - Behaviour: Binding - Notes: IBE  
OEL Type: EU - LTE: 600 mg/m<sup>3</sup>, 200 ppm - STE: 900 mg/m<sup>3</sup>, 300 ppm - Behaviour: Binding - Notes: Skin  
VLE 8h - VLE short: None
- DNEL Exposure Limit Values
- acetone - CAS: 67-64-1  
Worker Professional: 186 mg/kg - Consumer: 62 mg/kg - Exposure: Human Dermal Long Term, systemic effects  
Worker Professional: 1210 mg/kg - Consumer: 200 mg/kg - Exposure: Human Inhalation Long Term, systemic effects  
Consumer: 62 mg/kg - Exposure: Human Oral Long Term, systemic effects  
Worker Professional: 2420 mg/kg - Exposure: Human Inhalation Short Term, systemic effects
- PNEC Exposure Limit Values
- acetone - CAS: 67-64-1  
Fresh Water 10.6 mg/l  
Marine Water 1.06 mg/l  
Soil (Agricultural) 33.3 mg/kg  
Marine Water Sediments 3.04 mg/kg  
Fresh Water Sediments 30.4 mg/kg
- 8.2. Exposure controls
- Eye protection:  
Use close fitting safety goggles, don't use eye lens.
  - Protection for skin:  
Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.
  - Protection for hands:  
Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

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Respiratory protection:  
Use adequate protective respiratory equipment.  
Thermal Hazards:  
None  
Environmental exposure controls:  
None

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

Appearance and colour: Clear liquid  
Odour: solvent  
Odour threshold: n.av. mg/m<sup>3</sup>  
pH: na  
Melting point / freezing point: n.av. °C  
Initial boiling point and boiling range: initial 56 °C  
Solid/gas flammability: n.av.  
Upper/lower flammability or explosive limits: n.av. % v/v  
Vapour density (air=1): > 1  
Flash point: -10 °C  
Evaporation rate: n.av.  
Vapour pressure: 10 kPa  
Relative density: 0.81 g/ml  
Solubility in water: partial  
Lipid solubility: n.av.  
Partition coefficient (n-octanol/water): n.av.  
Auto-ignition temperature: n.av. °C  
Decomposition temperature: n.av. °C  
Viscosity: n.av. mPa.s  
Explosive properties: n.av.  
Oxidizing properties: not Oxidant

#### 9.2 Other information

Miscibility: n.av.  
Fat Solubility: n.av.  
Conductivity: na  
Substance Groups relevant properties: n.av.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Stable under normal conditions

#### 10.2. Chemical stability

Stable under normal conditions

#### 10.3. Possibility of hazardous reactions

It may catch fire on contact with oxidising mineral acids, and powerful oxidising agents.

#### 10.4. Conditions to avoid

Stable under normal conditions.

#### 10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

#### 10.6. Hazardous decomposition products

None.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Toxicological information of the mixture:

Possible risk of harm to the unborn child

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological information of the main substances found in the mixture:

toluene - CAS: 108-88-3

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit = 12.4 g/kg

Test: LC50 - Route: Inhalation - Species: Rat = 28.1 mg/l - Duration: 4h

Ethyl acetate - CAS: 141-78-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 4935 mg/kg

acetone - CAS: 67-64-1

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 5800 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit = 20 g/kg

Test: LC50 - Route: Inhalation - Species: Rat = 21.09 Ppm - Duration: 8h

Propan-2-ol - CAS: 67-63-0

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 5840 mg/kg

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- Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat = 72.6 mg/l - Duration: 4h
- b) skin corrosion/irritation:  
Test: Skin Irritant - Species: Rabbit Positive
- c) serious eye damage/irritation:  
Test: Eye Irritant - Species: Rabbit Positive  
butanone; ethyl methyl ketone - CAS: 78-93-3
- a) acute toxicity:  
Test: LD50 - Route: Oral - Species: Rat = 2737 mg/kg  
Test: LD50 - Route: Skin - Species: Rabbit = 6480 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat = 23.5 mg/l - Duration: 8h

If not differently specified, the information required in Regulation 453/2010/EC listed below must be considered as N.A.V.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Based on the information available it is not expected that this product may cause any adverse environmental effect when use instructions and disposal recommendations are followed.

Adopt good working practices, so that the product is not released into the environment.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

toluene - CAS: 108-88-3

Test: LC50 - Species: Fish - Duration h: 96 - mg/l: 57.68

Test: EC50 - Species: Daphnia - Duration h: 48 - mg/l: 11.5

heptane - CAS: 142-82-5

Test: LC50 - Species: Fish - Duration h: 96 - mg/l: 375

Test: EC50 - Species: Daphnia - Duration h: 48 - mg/l: 82.5

Test: IC50 - Species: Algae - Duration h: 72 - mg/l: 1.5

acetone - CAS: 67-64-1

Test: LC50 - Species: Fish - Duration h: 336 - mg/l: 4042

Test: LC50 - Species: Algae - Duration h: 96 - mg/l: 302

Propan-2-ol - CAS: 67-63-0

Test: LC50 - Species: Fish - Duration h: 96 - mg/l: 1400 *Lepomis macrochirus*

Test: EC50 - Species: Daphnia - Duration h: 48 - mg/l: 2285 *Daphnia magna*

Test: EC50 - Species: Algae - Duration h: 72 - mg/l: 100 *Scenedesmus subspicatus*

#### 12.2. Persistence and degradability

Not applicable

Regulation (EC) No. 648/2004 on Detergents and amendments:

Not applicable

#### 12.3. Bioaccumulative potential

Not applicable

#### 12.4. Mobility in soil

Not applicable

#### 12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

#### 12.6. Other adverse effects

None

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product and its residue:

Do not dispose in the canals of wastewater, waterways and soil.

The codes indicating the type of waste are considered based on the recommendations and scheduled use of this product. Different codes may be assigned based on the end user's use and the characteristics of the disposal.

Waste code CER/EWC (2000/532/CE), attributable to the product as:

07 06 04 \* - other organic solvents, washing liquids and mother liquors

H5 Harmful

Any remaining product should be disposed of with the material.

Containers/contaminated packaging

Containers, even completely empty, must not be disposed in the environment. The packagings which can not be cleaned should be disposed of as the material.

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Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

### SECTION 14: Transport information

- 14.1. UN number  
ADR-UN number: 1263  
IATA-Un number: 1263  
IMDG-Un number: 1263
- 14.2 UN proper shipping name:  
ADR-Shipping Name: PAINT or PAINT RELATED MATERIAL (heptane)  
ADR-Technical name: PAINT or PAINT RELATED MATERIAL,(heptane)  
IATA-Technical name: PAINT or PAINT RELATED MATERIAL,(heptane)  
IMDG-Technical name: PAINT or PAINT RELATED MATERIAL,(heptane)
- 14.3 Transport hazard class(es):  
ADR-Class: 3  
IATA-Class: 3  
IMDG-Class: 3
- 14.4 Packing Group:  
ADR-Packing Group: II  
IATA-Packing group: II  
IMDG-Packing group: II
- 14.5 Environmental hazards  
ADR-Environmentally mark : Yes  
Marine pollutant: Marine pollutant
- 14.6 Special Precautions for User  
ADR-Label: 3  
ADR-Classification code: F1  
ADR-Tunnel Restriction Code: D/E  
IATA-Label: 3  
IATA-Passenger Aircraft: 353  
IATA-Cargo Aircraft: 364  
IMDG-EMS: F-E, S-E  
ADR: The goods must be transported by vehicles authorized to transport dangerous goods in accordance with the requirements of the current edition of ADR and applicable national regulations. The goods must be carried in original packaging and in any case, in packaging made out of suitable and resistant materials with content and with a dangerous reaction. All the personnel loading and unloading dangerous goods must be trained on the risks associated with the preparation and any procedures to be taken in case of emergency situations.
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
nd

### SECTION 15: Regulatory information

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

1999/13/EC (VOC directive)  
Volatile Organic compounds - VOCs = 80.00 %  
Volatile Organic compounds - VOCs = 648.00 g/l  
Volatile CMR substances = 0.00 %  
Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %  
Organic Carbon - C = 0.57

- 15.2 Chemical Safety Assessment  
Not available

### SECTION 16: Other information

Full text of phrases referred to in Section 3:

R11 Highly flammable.  
R36 Irritating to eyes.  
R38 Irritating to skin.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R63 Possible risk of harm to the unborn child  
R65 Harmful: may cause lung damage if swallowed.  
R66 Repeated exposure may cause skin dryness or cracking.  
R67 Vapours may cause drowsiness and dizziness.

H225 Highly flammable liquid and vapour.  
H361 Suspected of damaging fertility or the unborn child.  
H304 May be fatal if swallowed and enters airways.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H319 Causes serious eye irritation.

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H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

Paragraphs modified from the previous revision:

SECTION 4: First aid measures  
SECTION 11: Toxicological information  
SECTION 12: Ecological information  
16. OTHER INFORMATION

This document was prepared by a competent person who has received appropriate training.

This MSDS cancels and replaces any preceding release.

Where applicable, refer to the following regulatory provisions :

Council Directive 67/548/EEC (Classification, packaging and labelling of dangerous substances) and subsequent amendments;  
Regulation (EC) n°1272/2008; Regulation (EC) N. 790/2009 (annex VI), Regulation (EC) n. 1907/2006 (REACH).

Commission Directive 1999/45/EC (Classification, packaging and labelling of dangerous preparation) and subsequent amendments; Commission Directive n. 2006/8/CE.

Regulation (EC) nr 648/2004 and CE N. 907/2006 (Detergents).

Directive 2003/105/EC ('Activities linked to risks of serious accidents') and subsequent amendments.

Directive 75/324/EEC (aerosols) and subsequent amendments. Directive 76/768/CEE (cosmetic products) and subsequent amendments.

Directive 76/769/EEC (restrictions on the marketing and use of certain dangerous substances and preparations) and subsequent amendments. Regulation (EC) N. 304/2003 and subsequent amendments. Directive 98/8/CE (placing of biocidal products on the market) and subsequent amendments.

Directives 91/156/CEE, 91/689/CEE, 94/62/CE (Disposal of waste ) and subsequent amendments.

The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), current edition.

regulations IATA/ICAO = Dangerous Goods Regulations by air, current edition.

RID = Regulations concerning the International Carriage of Dangerous Goods by Rail, current edition.

IMDG Code = International Maritime Dangerous Goods Code produced by the International Maritime Organization (IMO), current edition.

Directive 91/271/EEC and 91/676/CEE (protection of waters) and subsequent amendments.

Main bibliographic sources:

ESIS: European chemical Substances Information System and Environmental hazard classification.

Occupational exposure limit values (Commission Directives 2000/39/EC and 2006/15/CE)

ACGIH - TLV's for 2010

NIOSH - Registry of toxic effects of chemical substances (1983)

Material Safety Data Sheets of chemicals, REACH database

Material Safety Data Sheet and Technical Data of raw material as by Supplier

The ISS National Inventory of Chemical Substances (INSC)

Abbreviations and acronyms:

TLV-TWA = Threshold Limit Value- time-weighted average, 8-hour workday, 40-hour workweek; TLV-STEL-15 min = Threshold Limit Values - Short Term Exposure Limit; TLV-C = Ceiling exposure limit; Notes: IBE= Biological Exposure Indices; SEN= sensitizer; Skin= Can be absorbed through the skin. Carcinogenicity categories: A1 / A2 = confirmed / suspected human carcinogen; A3 = Animal carcinogen; A4 / A5 = Not Classifiable/not suspected as a human carcinogen. ACGIH = American Conference on Governmental Industrial Hygienists. OEL =Occupational Exposure Limit. LTE =long term exposure, STE=short term exposure.

n.av.= Not Available, n.a. = not applicable; LD50=lethal dose (solids and liquids), LC50=lethal concentration (gases) that will kill 50% of the test animals; ADR= European Agreement concerning the International Carriage of Dangerous Goods by Road. Regulations IATA/ICAO = Dangerous Goods Regulations by air, current edition.

RID = Regulations concerning the International Carriage of Dangerous Goods by Rail, current edition. IMDG Code = International Maritime Dangerous Goods Code produced by the International Maritime Organization (IMO), current edition.

PBT = Persistent, Bioaccumulative and Toxic substances. ; vPvB = very Persistent and very Bioaccumulative substances; CMR = Carcinogenic, mutagenic or reproduction toxic substances.

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.