



Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name : KAY DELIMER

Product code : 112009E

Use of the
Substance/Mixture : Delimer

Substance type: : Mixture

For professional users only.

Product dilution information : 1.1 % - 9.0 %

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

Identified uses : Descaling agent. Manual process

Recommended restrictions
on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company : KAY BV
Havenlaan 4
B-3980 Tessenderlo, Belgium +32 13 67 06 90 (Belgium)
BEKAYcustomerservice@ecolab.com

Ecolab Ltd.
PO Box 11; Winnington Avenue
Northwich, Cheshire, United Kingdom CW8 4DX
+ 44 (0)1606 74488
ccs@ecolab.com

1.4 Emergency telephone number

Emergency telephone
number : +441618841235
+32-(0)3-575-5555 Trans-European

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Version : 2.1

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Product AS SOLD

Corrosive to metals, Category 1

H290

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Eye irritation, Category 2 H319
 Specific target organ toxicity - single exposure, Category 3, H335
 Respiratory system

The classification of this product is based on toxicological assessment.

Product AT USE DILUTION

Corrosive to metals, Category 1 H290
 Eye irritation, Category 2 H319

The classification of this product is based on toxicological assessment.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Product AS SOLD

Hazard pictograms :  

Signal Word : Warning

Hazard Statements : H290 May be corrosive to metals.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

Precautionary Statements : **Prevention:**
 P261 Avoid breathing dust.
 P280e Wear eye protection/face protection.

Product AT USE DILUTION

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H290 May be corrosive to metals.
 H319 Causes serious eye irritation.

Precautionary Statements : **Prevention:**
 P280e Wear eye protection/face protection.

2.3 Other hazards

Product AS SOLD

Do not mix with bleach or other chlorinated products – will cause chlorine gas.

Product AT USE DILUTION

Do not mix with bleach or other chlorinated products – will cause chlorine gas.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

KAY DELIMER**3.2 Mixtures****Product AS SOLD****Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification REGULATION (EC) No 1272/2008	Concentration : [%]
citric acid	77-92-9 201-069-1 01-2119457026-42	Eye irritation Category 2; H319 Specific target organ toxicity - single exposure Category 3; H335	>= 50 - <= 100

Product AT USE DILUTION**Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification REGULATION (EC) No 1272/2008	Concentration : [%]
citric acid	77-92-9 201-069-1 01-2119457026-42	Eye irritation Category 2; H319 Specific target organ toxicity - single exposure Category 3; H335	>= 5 - < 10

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES**4.1 Description of first aid measures****Product AS SOLD**

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
- In case of skin contact : Rinse with plenty of water.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Product AT USE DILUTION

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
- In case of skin contact : Rinse with plenty of water.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

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Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

Product AS SOLD

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Product AS SOLD

Advice for non-emergency personnel : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

Product AT USE DILUTION

Advice for non-emergency personnel : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Product AS SOLD

Environmental precautions : Do not allow contact with soil, surface or ground water.

Product AT USE DILUTION

Environmental precautions : Do not allow contact with soil, surface or ground water.

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6.3 Methods and materials for containment and cleaning up

Product AS SOLD

Methods for cleaning up : Sweep up and shovel into suitable containers for disposal.

Product AT USE DILUTION

Methods for cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.

For personal protection see section 8.

See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Product AS SOLD

Advice on safe handling : Avoid contact with skin and eyes. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not breathe dust. Do not mix with bleach or other chlorinated products – will cause chlorine gas. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE).

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Product AT USE DILUTION

Advice on safe handling : Avoid contact with skin and eyes. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not mix with bleach or other chlorinated products – will cause chlorine gas. In case of mechanical malfunction, or if in contact with unknown dilution of product, wear full Personal Protective Equipment (PPE).

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Product AS SOLD

Requirements for storage areas and containers : Keep away from strong bases. Absorb spillage to prevent material damage. Keep out of reach of children. Keep container tightly closed. Keep only in original packaging. Store in suitable labeled containers.

Storage temperature : 0 °C to 50 °C

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Packaging material : Suitable material: Plastic material
Unsuitable material: Mild steel, Aluminium

Product AT USE DILUTION

Requirements for storage areas and containers : Keep away from strong bases. Absorb spillage to prevent material damage. Keep out of reach of children. Keep container tightly closed. Keep only in original packaging. Store in suitable labeled containers.

7.3 Specific end uses

Product AS SOLD

Specific use(s) : Descaling agent. Manual process

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Product AS SOLD

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Product AS SOLD

Appropriate engineering controls

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Safety glasses with side-shields

Hand protection (EN 374) : No special protective equipment required.

Skin and body protection (EN 14605) : No special protective equipment required.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:A-P

Product AT USE DILUTION

Appropriate engineering controls

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety

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	practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.
Eye/face protection (EN 166)	: Safety glasses with side-shields
Hand protection (EN 374)	: No special protective equipment required.
Skin and body protection (EN 14605)	: No special protective equipment required.
Respiratory protection (EN 143, 14387)	: None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Use certified respiratory protection equipment meeting EU requirements(89/656/EEC, (EU) 2016/425), or equivalent, when respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

Environmental exposure controls

General advice : Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

	Product AS SOLD	Product AT USE DILUTION
Appearance	: powder	liquid
Colour	: opaque, white	colourless
Odour	: slight	slight
pH	: 2.0, 1 %	2.0
Flash point	: Not applicable., Does not sustain combustion.	
Odour Threshold	: Not applicable and/or not determined for the mixture	
Melting point/freezing point	: Not applicable and/or not determined for the mixture	
Initial boiling point and boiling range	: > 100 °C	
Evaporation rate	: Not applicable and/or not determined for the mixture	
Flammability (solid, gas)	: Not applicable and/or not determined for the mixture	
Upper explosion limit	: Not applicable and/or not determined for the mixture	
Lower explosion limit	: Not applicable and/or not determined for the mixture	
Vapour pressure	: Not applicable and/or not determined for the mixture	
Relative vapour density	: Not applicable and/or not determined for the mixture	
Relative density	: 1.44 - 1.64	
Water solubility	: soluble	
Solubility in other solvents	: Not applicable and/or not determined for the mixture	
Partition coefficient: n-octanol/water	: Not applicable and/or not determined for the mixture	

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Auto-ignition temperature	: Not applicable and/or not determined for the mixture
Thermal decomposition	: Not applicable and/or not determined for the mixture
Viscosity, kinematic	: Not applicable and/or not determined for the mixture
Explosive properties	: Not applicable and/or not determined for the mixture
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

9.2 Other information

Not applicable and/or not determined for the mixture

Section: 10. STABILITY AND REACTIVITY

Product AS SOLD

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Do not mix with bleach or other chlorinated products – will cause chlorine gas.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Bases

Mild steel
Aluminium

10.6 Hazardous decomposition products

Decomposition products may include the following materials:
Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Product AS SOLD

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Product

Acute oral toxicity : There is no data available for this product.

Acute inhalation toxicity : There is no data available for this product.

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Acute dermal toxicity	: There is no data available for this product.
Skin corrosion/irritation	: There is no data available for this product.
Serious eye damage/eye irritation	: There is no data available for this product.
Respiratory or skin sensitization	: There is no data available for this product.
Carcinogenicity	: There is no data available for this product.
Reproductive effects	: There is no data available for this product.
Germ cell mutagenicity	: There is no data available for this product.
Teratogenicity	: There is no data available for this product.
STOT - single exposure	: There is no data available for this product.
STOT - repeated exposure	: There is no data available for this product.
Aspiration toxicity	: There is no data available for this product.

Components

Acute oral toxicity	: citric acid LD50 rat: 11,700 mg/kg
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Potential Health Effects

Product AS SOLD

Eyes	: Causes serious eye irritation.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Product AT USE DILUTION

Eyes	: Causes serious eye irritation.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Product AS SOLD

Eye contact	: Redness, Pain, Irritation
Skin contact	: No symptoms known or expected.

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Ingestion : No symptoms known or expected.

Inhalation : Respiratory irritation, Cough

Product AT USE DILUTION

Eye contact : Redness, Pain, Irritation

Skin contact : No symptoms known or expected.

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

Section: 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Product AS SOLD

Environmental Effects : This product has no known ecotoxicological effects.

Product AT USE DILUTION

Environmental Effects : This product has no known ecotoxicological effects.

Product AS SOLD

Product

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

Components

Toxicity to fish : citric acid96 h LC50 Fish: > 100 mg/l

12.2 Persistence and degradability

Product

no data available

Components

Biodegradability : citric acidResult: Readily biodegradable.

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

Product

Assessment : This substance/mixture contains no components considered to be

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either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product AS SOLD

- | | | |
|-----------------------------------|---|---|
| Product | : | Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | : | Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations. |
| Guidance for Waste Code selection | : | Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations. |

Product AT USE DILUTION

- | | | |
|------------------------|---|---|
| Product | : | Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | : | Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations. |

Section: 14. TRANSPORT INFORMATION

Product AS SOLD

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

- 14.1 UN number : Not dangerous goods

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14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods
14.6 Special precautions for user : Not dangerous goods

Air transport (IATA)

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods
14.6 Special precautions for user : Not dangerous goods

Sea transport (IMDG/IMO)

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods
14.6 Special precautions for user : Not dangerous goods
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not dangerous goods

Section: 15. REGULATORY INFORMATION

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : Not applicable.

National Regulations

Take note of Dir 94/33/EC on the protection of young people at work.

Other regulations : The Chemicals (Hazard Information and Packaging for Supply) Regulations.
The Control of Substances Hazardous to Health Regulations.
Health and Safety at Work Act.

KAY DELIMER**15.2 Chemical Safety Assessment**

No Chemical Safety Assessment has been carried out on the product.

Section: 16. OTHER INFORMATION**Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

Classification	Justification
Corrosive to metals 1, H290	Based on product data or assessment
Eye irritation 2, H319	Based on product data or assessment
Specific target organ toxicity - single exposure 3, H335	Calculation method

Full text of H-Statements

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Full text of other abbreviations

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; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Prepared by : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1

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thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Annex: Exposure Scenarios**Exposure Scenario: Descaling agent - Manual process, without PPE**

Life Cycle Stage : Widespread use by professional workers

Product category : **PC35** Washing and cleaning products (including solvent based products)

Contributing scenario controlling environmental exposure for:

Environmental release category : **ERC8a** Wide dispersive indoor use of processing aids in open systems

Daily amount per site : 7.5 kg

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Contributing scenario controlling worker exposure for:

Process category : **PROC10** Roller application or brushing

Exposure duration : 480 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour 1

Skin Protection : see section 8

Respiratory Protection : see section 8