GANPATI EXIM™
Pursuing Excellence

MATERIAL SAFETY DATA SHEET

MALEIC ANHYDRIDE

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

Product identifier
Trade name: Maleic anhydride
Synonyms: None
CAS Number: 108-31-6
Relevant identified uses of the substance or mixture and uses advised against :
Identified/Recommended uses: Preparation of polyester resins

2 HAZARDS IDENTIFICATION

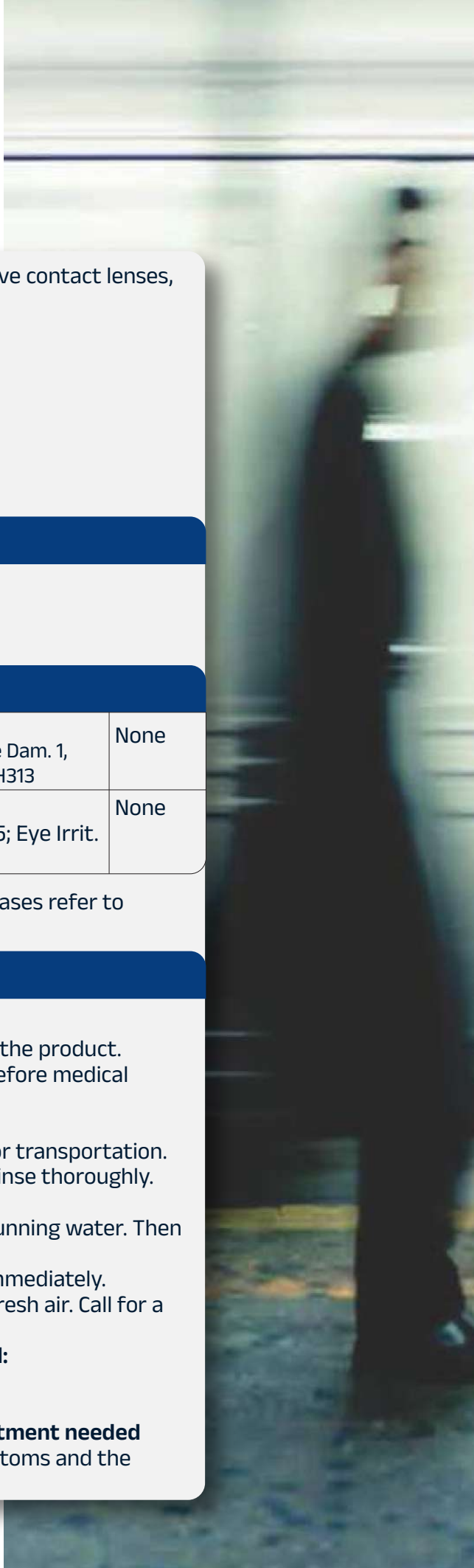
Classification of the substance or mixture:

Acute Tox. 4	H302 Harmful if swallowed.
Acute Tox. 5	H313 May be harmful in contact with skin.
Skin Corr. 1B	H314 Causes severe skin burns and eye damage.
Eye Dam. 1	H318 Causes serious eye damage.
Resp. Sens. 1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1	H317 May cause an allergic skin reaction.
STOT RE 1	H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

Label elements:
Hazard pictograms:

GHS05 GHS07 GHS08

Signal word: Danger
Hazard statements:
Harmful if swallowed.
May be harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure:Inhalation.
Precautionary statements:
Do not breathe dusts or mists.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].



IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations
Other hazard: None known.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterisation: Substances
CAS No. Description
108-31-6 maleic anhydride >99.6%

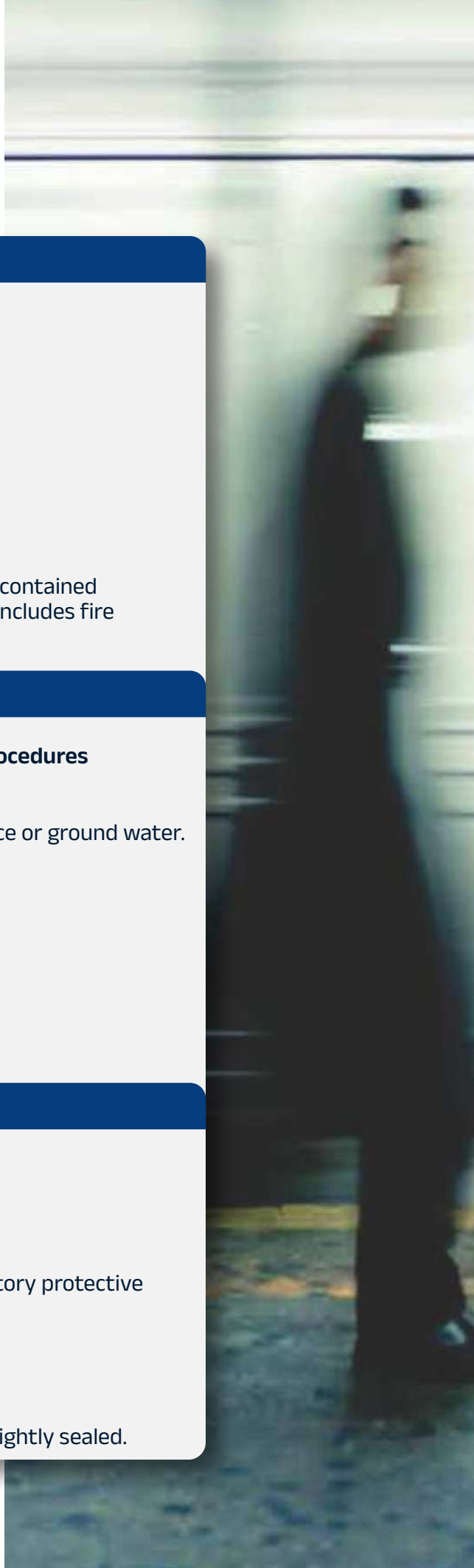
DANGEROUS COMPONENTS:

108-31-6	maleic anhydride Resp. Sens. 1, H334; STOT RE 1, H372; Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1A, H317; Acute Tox. 5, H313	None
108-31-6	maleic acid Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	None

Additional information: For the wording of the listed hazard phrases refer to section 16.

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.
If skin irritation continues, consult a doctor.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Do not induce vomiting; call for medical help immediately.
Call for a doctor immediately. Drink plenty of water and provide fresh air. Call for a doctor immediately.
Most important symptoms and effects, both acute and delayed:
Allergic reactions
Inflammation, skin redness, allergies, and/or dermatitis
Indication of any immediate medical attention and special treatment needed
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.



5 FIREFIGHTING MEASURES

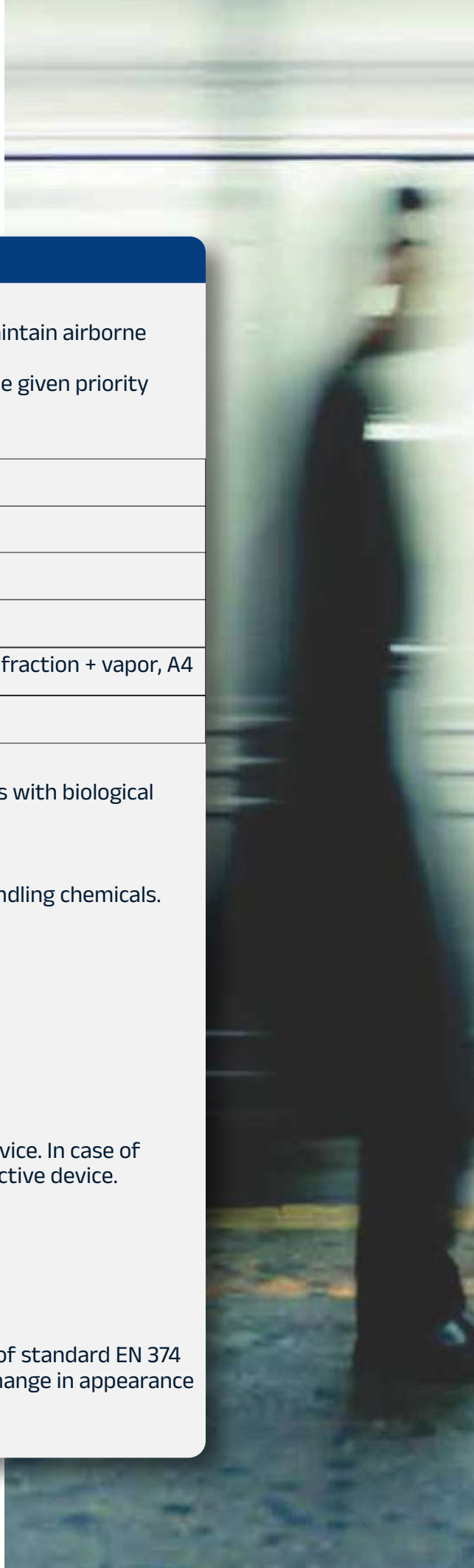
Extinguishing media
Suitable extinguishing agents:
Carbon Dioxide (CO_2)
Dry Powder
Water haze
Alcohol resistant foam
Special hazards arising from the substance or mixture
During heating or in case of fire poisonous gases are produced.
Carbon monoxide (CO)
Advice for firefighters
Protective equipment:
Mouth respiratory protective device. Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).

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:
Use neutralising agent.
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.

7 HANDLING AND STORAGE

Handling:
Precautions for safe handling
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Use personal protective equipment as required.
Information about fire - and explosion protection: Keep respiratory protective device available.
Storage:
Conditions for safe storage, including any incompatibilities
Store in a cool location.
Store in cool, dry place in tightly closed receptacles.
Further information about storage conditions: Keep container tightly sealed.



8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical facilities:
Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines.
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Control parameters

Ingredients with limit values that	
108-31-6 maleic anhydride	
PEL (USA)	Long-term value: 1 mg/m³, 0.25 ppm
REL (USA)	Long-term value: 1 mg/m³, 0.25 ppm
TLV (USA)	Long-term value: 0.01* mg/m³ DSEN, RSEN;*inh. fraction + vapor, A4
OELV (Korea)	Long-term value: 0.4 mg/m³

Ingredients with biological limit values:
The product does not contain any relevant quantities of materials with biological limited values that have to be monitored.

Personal protective equipment:

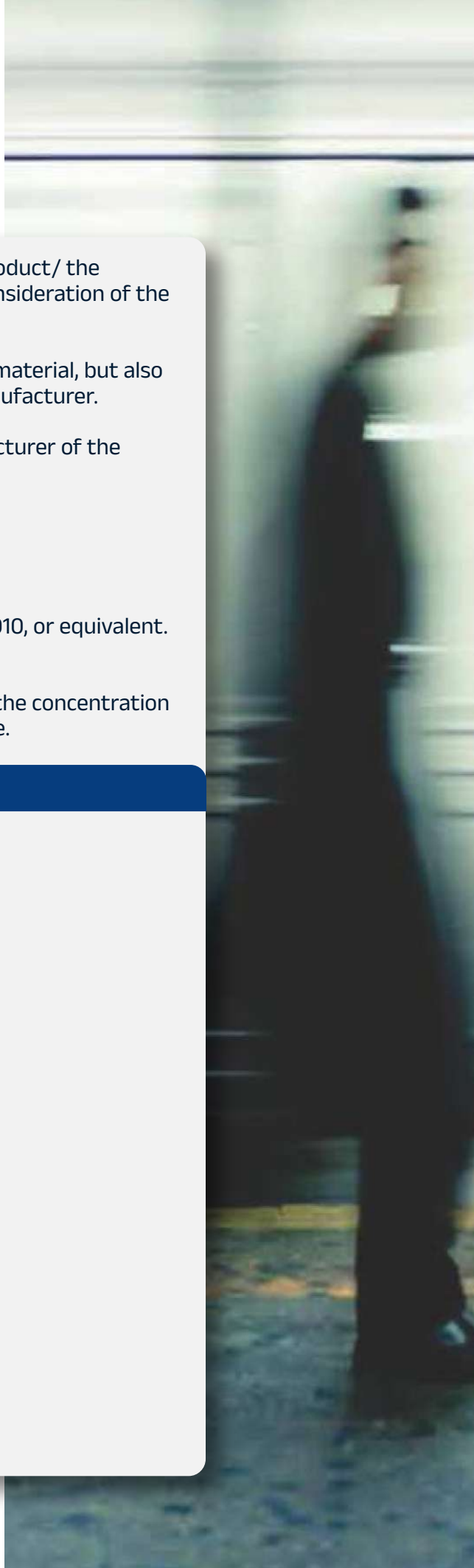
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Be sure to clean skin thoroughly after work and before breaks.
Ensure that washing facilities are available at the work place.

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longerexposure use self-contained respiratory protective device.

Protection of hands:

Protective gloves

The selected protective gloves have to satisfy the specifications of standard EN 374 or its equivalent. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.



The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. 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.

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

Safety glasses with side shields conforming to EN166, ANSI 87.1-2010, or equivalent.

Body protection:

Protective work clothing

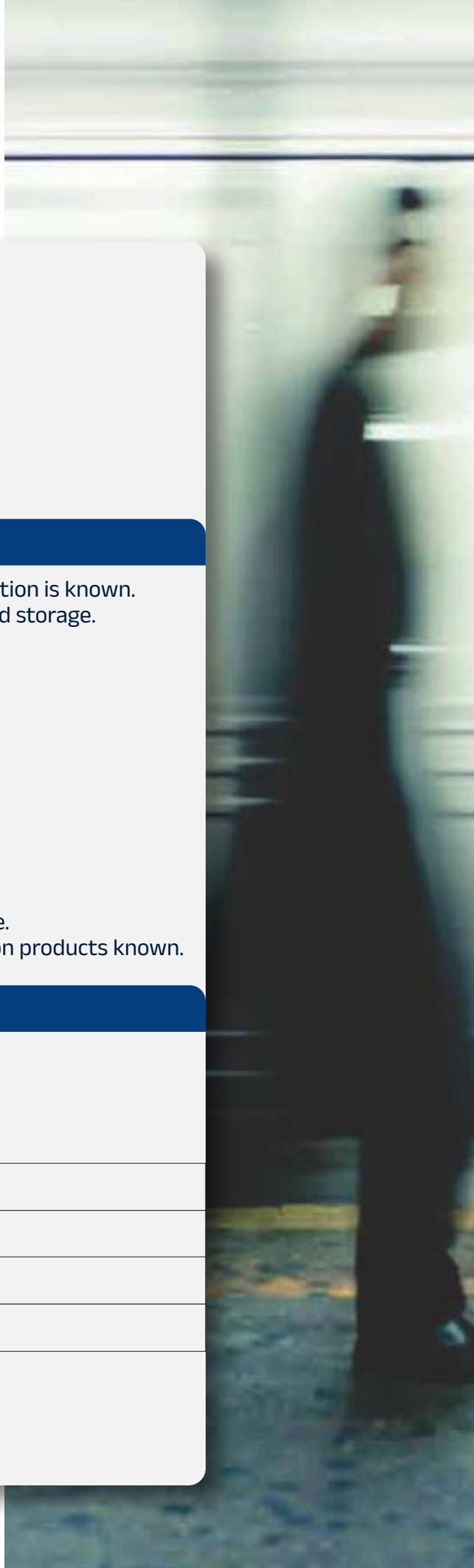
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Appearance	
Form	: Solid
Colour	: White
Odour	: Irritant
Odour threshold	: Not determined.
pH-value	: Not applicable.
Melting point/freezing point	: 53 °C
Initial boiling point and boiling range	: 202 °C
Flash point	: 103 °C
Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Product is not flammable.
Ignition temperature	: 477 °C
Decomposition temperature	: Not determined.
Auto-ignition temperature	: Not determined.
Explosive properties	: Not determined.
Explosion limits	
Lower	: 1.4 Vol %
Upper	: 7.1 Vol %
Vapour pressure at 20 °C	: 0.2 hPa
Density at 20 °C	: 1.48 g/cm³
Relative density	: Not determined



Vapour density	: Not applicable.
Evaporation rate	: Not applicable.
Solubility in / Miscibility with water at 20 °C	: 407 g/l
Partition coefficient: n-octanol/water	: -2.61 log POW
Viscosity	
Dynamic	: Not applicable.
Kinematic	: Not applicable.

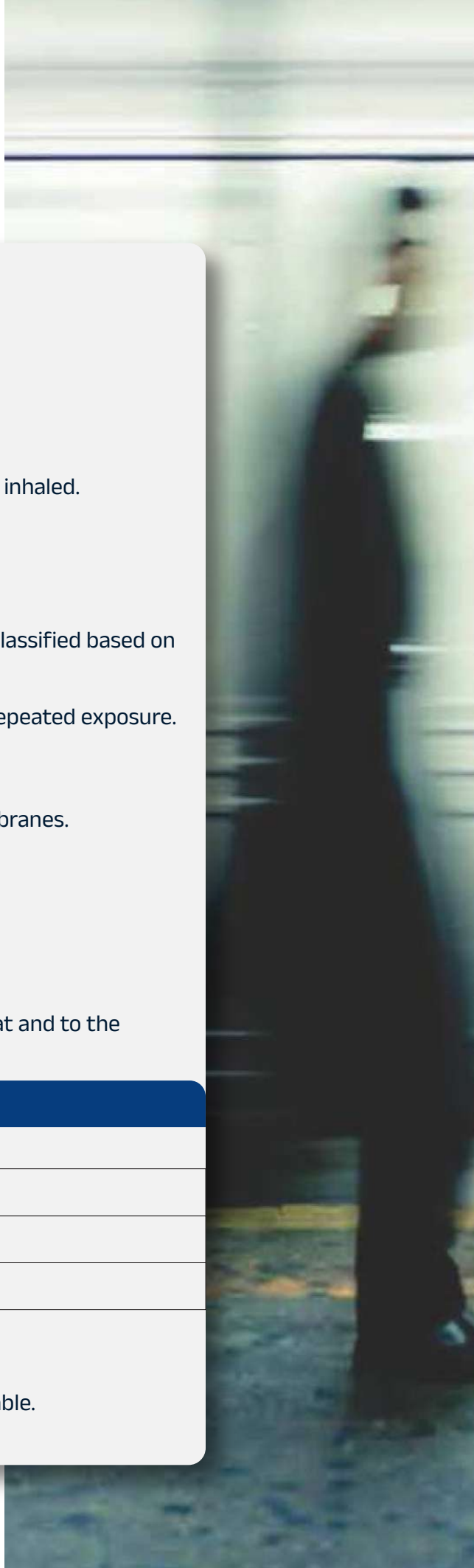
10 STABILITY AND REACTIVITY

Reactivity: When properly handled and stored, no dangerous reaction is known.
Chemical stability: This product is stable under prescribed use and storage.
Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
Possibility of hazardous reactions:
Exothermic reaction with:
Alkali metals
strong alkalis
Amines.
Water
Alcohols
Strong oxidizing agents
Conditions to avoid: Strong heating.
Incompatible materials: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity
Harmful if swallowed.
May be harmful in contact with skin.

LD/LC50 values relevant for classification:		
108-31-6 maleic anhydride		
Oral	LD50	400 mg/kg (rat)
Dermal	LD50	2,620 mg/kg (rabbit)



Skin corrosion/irritation:
Causes severe skin burns and eye damage.
Rabbit: corrosive to the skin (OECD Guideline 404)
Serious eye damage/eye irritation:
Causes serious eye damage.
Rabbit: corrosive to the eye (OECD 405)
Respiratory or skin sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Guinea Pigs: Sensitizing to the skin (OECD 429)
Germ Cell Mutagenicity: Not classified based on available data.
Carcinogenicity: Not classified based on available data.
Reproductive Toxicity: Not classified based on available data.
Specific Target Organ Toxicity - Single Exposure (STOT SE): Not classified based on available data.
Specific Target Organ Toxicity - Repeated Exposure (STOT RE):
Causes damage to the respiratory system through prolonged or repeated exposure.
Route of exposure: Inhalation.
Aspiration Hazard: Not classified based on available data.
Primary irritant effect:
Skin corrosion/irritation Caustic effect on skin and mucous membranes.
Serious eye damage/irritation
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
Respiratory or skin sensitisation
Sensitisation possible through inhalation.
Sensitisation possible through skin contact.
Additional toxicological information:
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 ECOLOGICAL INFORMATION

· Toxicity

Aquatic toxicity:	
108-31-6 maleic anhydride	
LC50(96h) (static)	230 mg/l (fish) (OECD 203)

Persistence and degradability
Easily biodegradable
Degradation : >90% (28d, OECD 301B)
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.

General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Other adverse effects No further relevant information available.

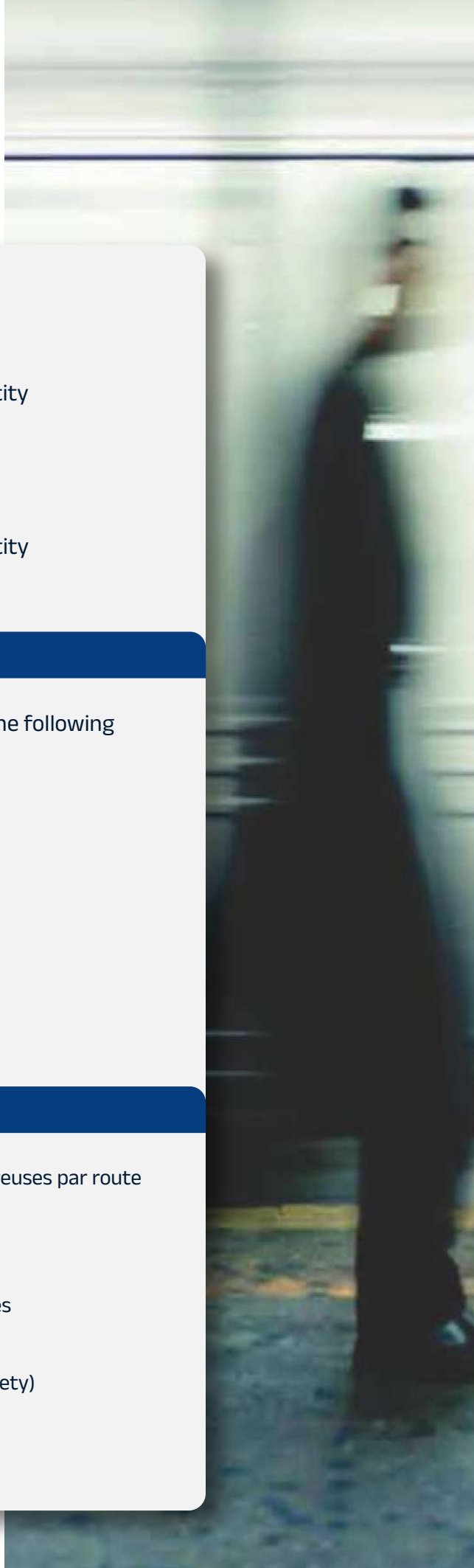
13 DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system. Any disposal method should also comply with national, regional, provincial, and local laws.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agents: Water, if necessary together with cleansing agents.

14 TRANSPORT INFORMATION

UN-Number	
ADR, IMDG, IATA	: UN2215
UN proper shipping name	
ADR	: 2215 MALEIC ANHYDRIDE
IMDG, IATA	: MALEIC ANHYDRIDE
Transport hazard class(es)	
ADR, IMDG, IATA	

Class	: 8 Corrosive substances.
Label	: 8
Packing group	
ADR, IMDG, IATA	: III
Environmental hazards	: Not applicable.
Special precautions for user	: Warning: Corrosive substances.
Hazard identification number (Kemler code)	: 80
EMS Number	: F-A,S-B
Segregation groups	: Acids
Stowage Category	: A
Segregation Code	: SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides SG50 Segregation from foodstuffs as in 7.3.4.2.1, 7.6.3.1.2 or 7.7.3.6. SG57 Stow "separated from" odour-absorbing



Transport/Additional information

ADR

Limited quantities (LQ)	: E1
Excepted quantities (EQ)	: Code: E0
	: Not permitted as Excepted Quantity
Transport category	: 3
Tunnel restriction code	: E

IMDG

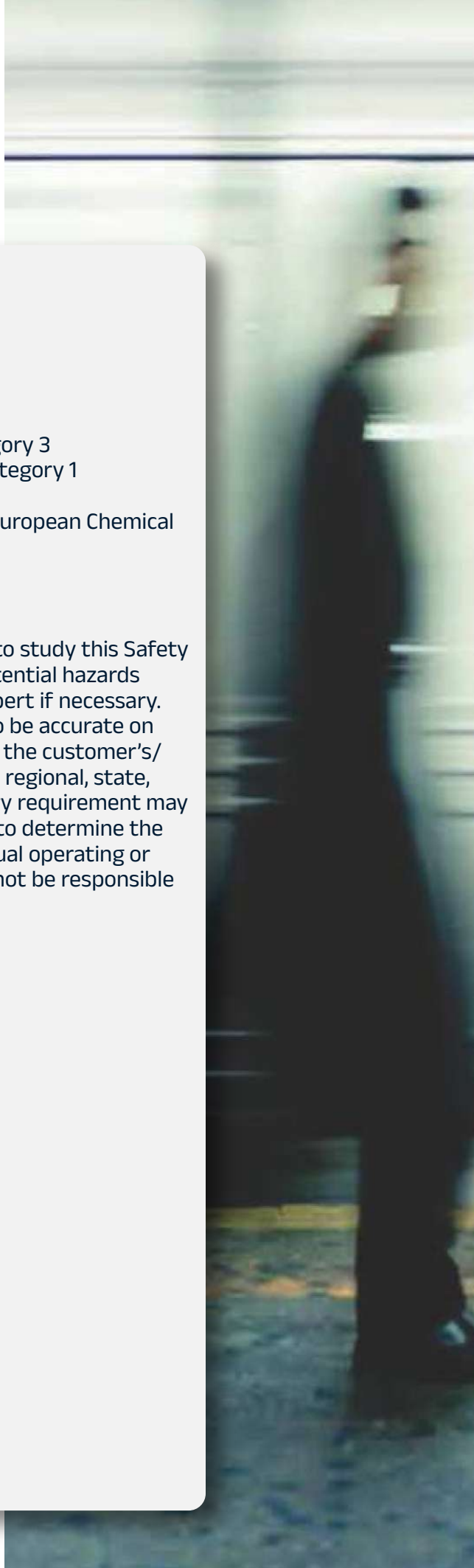
Limited quantities (LQ)	: E1
Excepted quantities (EQ)	: Code: E0
	Not permitted as Excepted Quantity
UN "Model Regulation"	: UN 2215 MALEIC ANHYDRIDE, 8, III

15 REGULATORY INFORMATION

Status of global inventories:
All component(s) within this product is listed or exempted from the following country's chemical inventory:
USA – TSCA
Australia – AICS
Canada – DSL
China – IECSC
EU – EINECS/NLP
Japan – ENCS
Korea – KECI
New Zealand – NZIoC
Philippines – PICCS
Taiwan – TCSI
Thailand - TECI
Vietnam – NCI

16 OTHER INFORMATION

Abbreviations and acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the
International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European LIst of Notified Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 5: Acute toxicity – Category 5



Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Sources

Most toxicological and eco-toxicological data are obtained from European Chemical Agency (ECHA)'s
public dissemination website.

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

General Disclaimers:

CCP Group recommends that all the users/customers/recipients to study this Safety Data Sheet (SDS) carefully and understand all the data or any potential hazards associated with this product. Please consult with appropriate expert if necessary. The information herein is provided in good faith and is believed to be accurate on the date of issue. No warranty, expressed or implied, is given. It is the customer's/ user's responsibility to ensure that they are complying with local, regional, state, provincial, and/or national laws in using this product, as regulatory requirement may differ at each level. It is also the customer's/user's responsibility to determine the necessary condition required for using this product safely, as actual operating or usage conditions are beyond CCP Group's control. CCP Group will not be responsible for any